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EDITOR OF AMERICAN BEE JOURNAL:

Please insert the article on movable frames from December No. of Mr. King's paper, so that my comments upon it may be better understood by your readers.

MOVABLE FRAMES.

Is Mr. Langstroth the Inventor?

"If Mr. Langstroth is not the inventor, who is?"

SAMUEL WAGNER.

It is not in a spirit of unkindness that we enter upon the discussion of this question. Messrs. Langstroth, Wagner, Otis & Co., have been doing all they could to injure us and our business, but we do not want to retaliate. Other motives prompt us. The state of public feeling; the earnest solicitations of numerous apiarians; vindication of ourselves, and duty to the beekeepers of America. These are some of the motives which prompt us to publish these facts, and we think that our visit to Europe, and the particular attention we have given this whole year to the history of movable frame hives, give us ability to do it understandingly.

For centuries, the Grecians used bars in their hives, similar to the narrow top-bars now used in movable-comb hives, but Francois Huber, of Geneva, Switzerland, was probably the *first inventor* of the present style of movable frames. This was about three-quarters of a century ago.

Many different editions of Huber's excellent book on the honey bee have been printed in several cities of Europe, all containing plates with engravings of his hive.

Huber first made an observation hive containing a single comb, with glass on each side. As it was difficult to winter bees in such a hive, he set several side by side, removing all the glass except the panes on the outside. The bars of these frames were too wide for a single comb after removing the glass, which led him to construct a hive with *frames*, having bars about 1½ inches wide, securing them together by hinges. This was the regular Huber hive, but one plate in his book shows narrow bars resting in rabbets in a case or hive with long screws like side bars for elevating the comb, naturally suggesting what is called the "bars and frames" in England, and "movable frames" in this country and Germany.

For nearly half a century, beekeepers advanced no farther than the use of the Grecian bars, with honey board and supers above, usually bell glasses in Europe, because they are cheaper there than wooden boxes with glass sides. Bevan and others placed one hive upon another. It is a common remark in Eng-

land that his book, "Bevan on the Honey Bee," has furnished matter for most of the later works on the subject, both in England and America. Rev. C. Cotton, an able English writer, and author of "My Bee Book," says, "A Reverend American author obtained his frontispiece"—the queen surrounded by workers—"from his book, but spoiled the engraving by mistaking what he intended as the appearance of the queen in the act of laying, for a representation of the queen with her sting protruding"—a very unnatural occurrence. We confess we thought croakers about similarity of names came near copying book titles, when we took up a book published in Dublin, "Richardson on the Hive and Honey Bee." These works contain nearly the same matter that is found in all the late works, and one of them "The Beekeeper's Manual," not only describes and illustrates the use of honey boards and supers or bell glasses, but also the use of the *shallow chamber*, about which so much has been said of late.

W. Augustus Munn, of Dover, England, was probably the first to invent narrow frames to be used within a case or hive. He made his first hive with frames in 1834. By 1843, he had taken out a patent in Paris, France (for the hive had been in too general use in England), and a friend using the hives had described the same with an engraving in *The Gardener's Chronicle*, a journal of large circulation, published in London (bound volume for 1843, page 317). This hive really embraced all the practical features of the movable frames of to-day. The same was also described in a pamphlet by Major Munn, in 1844, and in the second edition, 1851, he describes the same with triangular frames to lift out at the top. His descriptions, though brief, show that he was familiar with supers, and that with his oblong frames he used a honey board, the shallow chamber, and surplus honey boxes above; to all of which Major Munn has made solemn oath, perfectly invalidating the pretended claims of Mr. Langstroth.

The Russian, Prokopovitch, perhaps, should be mentioned here, for he supplied the market at St. Petersburg with thousands of pounds of honey in *frames*, but his frames were not used in the breeding apartment, and therefore do not invalidate Mr. Langstroth's claims, though his hive was described in a pamphlet in 1841.

We shall next mention movable frames used in France. M. De Beauvoys is the author of a series of excellent works on bee-culture. In the second edition, published in 1847, and the third in Paris, 1851, he describes movable frames containing all the features of the most perfect frames now used in this country, and we shall show by the description of the storifying system, using boxes for surplus honey above the breeding hive, that Mr. L.'s attempt to evade this

testimony is simply ridiculous, though it might do before a purchasable patent office examiner.

We wrote to Europe for these works, but all in vain. When we reached London, we found that Mr. L. had purchased copies of Mr. Munn's work, but we could find none, though our friends assured us that they would find a copy somewhere by the time we returned from the continent. When we visited Paris we found but one person of whom we had heard that we might possibly obtain a copy of M. Debeauvoys's work. We were glad to find the books in his possession, for the author had been dead some years. But our polite Frenchman, M. Hamet, declined to part with the books. We could not persuade him even to loan us the 1851 edition, though we offered abundant security for its safe return. Mr. Hamet however expressed an earnest desire that we should secure the works, and gave us the address of a publisher where we might possibly obtain them. We were successful and secured a double set of these valuable books.

When we returned to London, Major Munn nor a half dozen other friends had succeeded in finding a single copy of his work of 1851. We authorized the offer of a reward, first of one pound, to be increased to five pounds, rather than fail. Two weeks after we reached New York, and only a few days after our satchel had been stolen with one set of our French books and other valuable European documents, Major Munn's 1851 pamphlet came safely by mail.

The name of Augustus Baron von Berlepsch, formerly of Seebach, Germany, now of Munich, Bavaria, should be next mentioned among European inventors. We have the hive which he presented March 16th, 1852, to the Editor of the *Bienenzeitung* (the German bee journal, published at Eichstadt), a description of which was published in the May number for 1852. The hive is stamped with the seal of Dr. Buchner, Royal Notary Public of Munich. The document containing his oath was lost in the stolen satchel, but we have just received a duplicate similarly stamped, from which we have taken the following facts (we sent a copy of the document to Mr. Wagner, and also to Mr. Mitchell. Mr. Wagner returned the copy, refusing to publish it): The Baron of Berlepsch says, that in the winter of 1842-43, he first heard of Dzierzon's hive with movable bars, and obtained a sample which he perceived to be an invention of the first rank, but still in its infancy, and that the bars should be replaced with frames. He made frames for a hive in which he put a swarm early in June, 1843, but was troubled to keep the frames the proper distance from each other. He remedied this partially in 1844, and in 1845 he left space between the frames and the walls of the hives to prevent the bees from gluing the side bars to the walls. In 1846, he and his partner, Jacob Shultze, obtained fifty glass jars or bell glasses, and thirty of them were filled in May, 1846. We saw samples of these frames, and they were exactly like the narrow frames with tops, so improperly called "Langstroth" frames, in this country. They were used with all the features—air spaces, shallow chamber, perforated top, and surplus or bell glasses above—from 1846 to 1850, when they were improved by side projections, and described in the German Bee Journal, as before stated, in May, 1852. The Baron von Berlepsch says, "Mr. Langstroth's claims are ridiculous." He heard of them in 1856, through an intelligent American beekeeper, Mr. Phineas MacMahon, from Philadelphia, who was not a little surprised to see eighty movable comb bee hives full of bees, and was told by the Baron that the frames in them had not been changed since 1851. "Now I know," said he, "that Mr. Langstroth is not the inventor, but I wonder how he heard of the frames." The Baron replied that he supposed Mr. L. got it of

Paul Reinhard Backhaus, to whom he sent hives in 1851. Lina Baroness of Berlepsch writes that she has received a letter from a son of Mr. Backhaus, stating that his father returned to Germany in 1857, and that he had much to say about Mr. Langstroth. He returned to Dubuque, Iowa, in 1860, and soon after died. We are on the track of these hives, and will produce them, if they can yet be found. We will now only briefly notice the use of

MOVABLE FRAME HIVES IN AMERICA.

There are many others who used movable frame hives in America prior to Mr. Langstroth, though many believe that Mr. L. first heard of the German frames through letters to Mr. Wagner, prior to 1852.

The first printed description of a movable frame hive published in America, was given in *The Scientific American*, March 6th, 1847, page 187. The inventor, Jacob Shaw, Jr., then residing in Hinckley, Medina county, Ohio, now lives in Shelby, Ohio, and has the same old hive in his possession. We have seen the hive, and it meets all of Mr. L.'s claims. This is but one among many others used by beekeepers in America prior to 1852.

We can only mention the names of others now. A. F. Moon, Edward Townly, Dr. Metcalf, Andrew Harbison, and W. A. Flanders, making Mr. L. only the seventh son, and it seems that he too, like all other seventh sons, has been called Doctor. We really pity Mr. L., and would gladly have permitted him to enjoy the honors claimed as his own, but the great mass of beekeepers are losing all sympathy for him since he united with his former foe, Mr. Otis, and thus made it our duty to search out the facts and make them public. Though it has cost us three or four thousand dollars, we shall not be the loser in the end, as we shall be able to bring out some improvements in bee-culture that will reward us, as well as advance the cause of bee-culture in America.

We lately returned from St. Paul, and have just learned that Mr. Otis has permitted Mr. Hosmer's case to be dismissed, and says he shall give it all up, if Mr. King has got the evidence spoken of some months since in the JOURNAL. We have now informed Mr. Otis of the facts in our possession, and hope he will be content to retire to private life, and cease to perambulate through the country, vainly trying to collect blackmail from the honest apiarists of America.

H. A. K.

H. A. King on Movable Frame Hives.

Expecting that the U. S. Court will soon pass judgment upon many of the matters referred to by Mr. King, I should not at this time have noticed his article, but for the damage it might inflict upon owners of territorial rights in my patent; so many persons taking for granted that what is not answered, must be unanswerable.

I object decidedly to the heading which Mr. King has given to his article: "Movable Frames. Is Mr. Langstroth the inventor?" because it conveys the impression that I claim absolutely the invention of movable frames, when I have repeatedly, in Mr. Wagner's Journal and elsewhere, stated that movable frames were used in Europe before my invention.

It is true, that when I applied for a patent, I knew nothing of any movable frames except those of Huber; but even after becoming acquainted with the frames of Munn and Debeauvoys, I was satisfied that mine, as described in the original patent, need not be confounded with theirs. Finding, however, that these foreign inventions were continually alleged to be substantially the same as mine, I applied for a reissue of my patent, and submitted to the office

copies of Munn, Debeauvoys, and such other works in my possession, but not in their library, as had any bearing on movable frames. In this reissue "an improved construction and arrangement of the frames of bee hives" is claimed, and the difference between this improved construction and that of Huber, Munn, and Debeauvoys, is clearly shown. Mr. King cannot be ignorant of my true position; for in his attorney's answer to the suit of Mr. Otis against him for infringing upon the Langstroth patent, he nowhere assumes that I have claimed the absolute invention of movable frames, but only attempts to show that I am not the inventor of the style claimed in the patent.

This misstatement of the very point at issue, has been dwelt upon at more length, because it so aptly ministers to the prejudices of those who have represented me as the mere introducer of a foreign invention, and yet "claiming everything," and because it is evident from his "declaration," that the Baron von Berlepsch really believes it, and deemed it important "to prove in the case of Otis v. King, that long before Mr. Langstroth applied for his patent, there were used in Germany, and the rest of Europe, hives with frames!"

Mr. King's statement, that Huber was probably the first inventor of the present style of movable frames, is incorrect, the *present style* of frames being that which inserts them in a case; whereas, the Huber frames, when put together, formed a complete hive without any case.

The reference to Cotton's frontispiece, is uncalled for, as I have in my work acknowledged my indebtedness to Mr. Cotton for this beautiful engraving. Those who have read my treatise, will know the care which has been taken to give to Bevan and others, full credit for what has been borrowed from them.

Does Mr. King accomplish anything with intelligent men, by insinuating the similarity between the title of my work and that of Richardson's except to exhibit an intense eagerness for fault-finding?

That Taylor's Beekeeper's Manual illustrates the use of honey boards and supers, is true; but Mr. King has not found in it the shallow chamber claimed in my patent. The readers of the Journal must bear with me, when I place my denial side by side with his affirmation, and remember that he has made this necessary by attempting to forestall the verdict of the proper tribunal.

It is admitted that Major Munn patented his bar and frame hive in France, in 1843; that it was very briefly described with an engraving in the London Gardener's Chronicle, for 1843, and very minutely described and illustrated by Mr. Munn in the first edition of his work, in 1844. Mr. S. S. Fisher, late commissioner of patents, and counsel for Mr. Otis, after careful examination, can find nothing in this hive which invalidates a single claim in my patent. It is not what Mr. Munn did, but what he described in some printed publication issued prior to my application for a patent, that will satisfy the requirements of the patent laws. Of this, Mr. King must be well aware, as his "answer" to the suit, *amended* since his return from Europe, makes no reference to the Major's oath.

Munn's triangular frames of 1851, were intended to remedy the defects of his oblong frames of 1844, the failure of which is acknowledged in the second edition of his work. Mr. Fisher can see nothing in these triangular frames in the least damaging to the claims of my patent, and I believe that the Huber hive is more serviceable, both for practical and scientific purposes, than either of Mr. Munn's.

We come now to the inventions of M. Debeauvoys. His frames of 1847, were made *close fitting, both to*

the sides and top of the case containing them. Could any of our practical beekeepers be persuaded to use them, even if furnished free of cost? His frames of 1851, had their tops close fitting to each other, with no plan of any kind for securing the surplus honey outside of the frames of the main bee-chamber, and even to secure the surplus there, he used a complicated arrangement of double frames, connected by rings and movable pins and staples. Although in 1853, he materially simplified the construction of his hive, he does not in the last edition of his work, in 1863, even so much as *suggest any arrangement for supers or boxes.* Mr. Hamet, the editor of the French Bee Journal, says in his work on bee-culture (1859), that the removal of frames from this Debeauvoys hive, is often more difficult than from the Huber hive, and that the hive has never been accepted by practical men in the great beekeeping districts in France. The construction of both his hives was described in my reissue, and Mr. Fisher can see nothing in them that invalidates my claims.

Has Mr. King weighed carefully the language he has used in extolling the inventions of Munn and De Beauvoys? "This hive" (Munn's) "really embraces all practical features of the movable frames of to-day." "He" (Debeauvoys) "describes movable frames containing all the features of the most perfect frames now used in this country." After asserting that these old foreign inventions had "ALL practical features," and "ALL the features of the MOST PERFECT frames now used in this country," ought he not to make a bonfire of his patent papers, and then call on all other patentees of movable frame hives to do the same, that they may no longer be engaged in the disreputable business of selling patents which have no new features of any practical value?

Passing over Mr. King's account of his long and tedious search for books (all of which, and more besides, Mr. Fisher would cheerfully, as a matter of courtesy, have loaned to his counsel), we come to the deposition of the Baron von Berlepsch. In the *Bienenzeitung*, for May, 1853, there is no illustration given of this hive, and the "description" of it to which Mr. King refers, is in such vague and general terms, that for aught that appears, the Baron might only have used Huber frames inserted in a case. Even if the Berlepsch frames had been illustrated and fully described, they could not have invalidated my patent, which was applied for more than four months before this article was published in Germany! Mr. King, in his "amended answer," makes no reference to the Baron's hive, or to his "declaration;" and as this answer, filed after his return from Europe, as regards foreign inventions is substantially the same with his *first* answer, it may be presumed that after putting himself into personal communication with the editors of the European bee journals, and with the most eminent apiarians abroad, he has found nothing to allege against the validity of my patent, which had not been previously known and weighed by Mr. Fisher and myself.

We come lastly to the claims of parties in this country to a prior invention of the frames described in my patent. The claims of Mr. Shaw were for the first time brought to my notice by the amended answer of Mr. King. From Mr. Shaw's deposition, which has recently been taken, it appears that he used a metal case with double metallic water-tight

*There are some things in this document, which deserve special notice, and I cannot but hope, as Mr. King has given it to the public before offering it in evidence in the suit, that Mr. Wagner will publish it with suitable comments, either in this or the March No. of his Journal.

walls, into which he could pour a hot fluid to allow the safe removal of the frames, if the bees fastened them to the case, and that the cover of this case was a metallic reservoir filled with a fluid for drowning the bee-moth; that he only made a single hive; that he never could obtain a drop of honey from it in boxes or supers; that the first two colonies which he put in it, after remaining in it for a longer or shorter time, ran away from it; that the last swarm died in it, and that becoming discouraged, he laid it aside. Does Mr. King seriously imagine that an abandoned device, which conferred no benefit whatever either on Mr. Shaw or on the public, will aid him before the courts in overthrowing the claims of my patent?

The testimony of Messrs. Moon, Townley, Metcalf, Harbison, and Flanders, was presented when I applied for the extension of my patent. The examiner, in his report to the commissioner of patents, commenting upon a part of the testimony, says: "Such testimony on the part of the opposition, and this is representative of the whole, becomes an argument, and a very strong one, in favor of this applicant;" and the commissioner, by extending the patent, sustained this report.

In this review of Mr. King's article, I have by no means attempted such a vindication of the claims of my patent as will be presented to the court, but only such comments as Mr. King himself has made necessary that the public may not be unduly influenced before the case can come to trial.

In the beginning of his communication, Mr. King says that I have aided Mr. Otis and others "in doing all they could to injure him and his business;" and in the November No. of his paper, he says that I have been doing all that I could "to aid such men as Otis in their malicious designs against most of the enterprising beekeepers of the United States." Now, Mr. Otis is the sole owner of the larger part of the territory in my patent, but he has not, since 1867, been connected in business with me. He is attempting to get a decision from the U. S. Court, by which he can protect his rights under the patent, against those whom he regards as infringing upon them. If I should in any way discountenance or obstruct him in his appeal to the law, or if I even failed to give him all the aid in my power, would it not be a gross breach of good faith on my part, not only to him, but to other parties who have purchased an interest in my patent? Are not the beekeeping public sick of this seemingly interminable controversy about the validity of my patent? and do they not desire to have it legitimately settled as soon as possible? Had my means permitted, I should long ago have asked the courts to decide the question.

There are some other personal matters in Mr. King's article, which, before they are noticed, make it proper to quote here from my address to the beekeeper's of the United States, published in the April No. of this Journal.

"In the contest which must soon come before the courts of law, I hope that every legitimate weapon which can be used to break down my patent, will be brought forward; and I now hereby invite all the beekeepers of the United States, and all anywhere else, who may see this appeal, to send to Mr. King, against whom suit has been brought, for infringing on my patent, any information contained in books or printed publications in any language, prior to the issue* of my patent (October 5th, 1852), which seems to have any adverse bearing on my case, and to bring forward any knowledge they may possess of any invention made in this country, but not described in

print, by which the claims of my patent may be either weakened, limited or invalidated."

Does Mr. King, when suggesting that I might have bribed the patent office examiner, or that I might have conspired with Mr. Wagner to patent a foreign invention as my own, suppose that the beekeepers of this country will consider him as using the "legitimate weapons" of an honorable warfare? or that they will ever give credit to such unworthy insinuations?

L. L. LANGSTROTH.

Oxford, Ohio, Jan. 11, 1872.

Baron von Berlepsch and Movable Frames.

MR. EDITOR:—Mr. King, having procured a "Declaration" from Baron von Berlepsch ostensibly to be used in a law-suit, and having published the declaration before offering it in evidence, I desire to give the substance of it to the readers of your Journal, with such other matters as will enable them to judge of its true value.

The Baron says: "In the winter of 1842-3, I first heard of Dzierzon's invention of a bee-hive with movable combs and the next spring I hastened to obtain one of those hives.

When it arrived, I recognized at a glance that this was an apiarian invention of the first rank, but that it was, as it were, in its infancy, and that the bars had to be replaced by frames if this invention was to have any lasting practical value." He then states that he made a hive with frames instead of bars, and put bees into it in June, 1843. He then details the successive steps by which he learned to keep the frames separated at suitable distances from each other, and from the walls of the case. He says that "in 1845, the hive had been improved to such a degree that the frames could be easily removed and replaced," but that for want of "wings or ears on their four corners, many mistakes occurred, as often the combs would be too close or too far apart." He next relates how in 1846 he and his partner had thirty-six glass jars filled with honey, by using them as supers over his hives, and says: "with these imperfect hives I raised bees until 1850, without being able to make any improvement on the frames. In order to keep them apart at proper distances, we pressed at that time little pieces of wax between the ends of two frames."

The Baron next describes the improvements which he made in arranging the three tiers or stories of frames in his hive, and how in 1850 his partner suggested that by putting "projections of half an inch on two ends of the upper part of the frames, they could be held always in the same position and the bees would have the proper room between the combs." This necessitated the replacing of the frames without being able to turn them, but he says: "Now I had discovered what was wanting. In the winter of 1850-51, I had frames made whose upper parts had on all four ends a projection of one-fourth of an inch. Now there was no obstacle to replace the frames at your pleasure; in short, the practical frame such as it still exists to-day, was invented. Practical experience in the summer of 1851, confirmed the invention again, and in the spring of 1852, I sent to the Editor of the *Bienenzeitung* an improved hive, which was transmitted by him this year to Mr. H. A. King." * * *

"In view of the above, it really appears ridiculous to me that the American Langstroth claims to have invented the frames himself, and attaches such great value to the building of honey in vessels of glass and other materials by means of the bung-hole. This invention might be claimed with more right by the

*I ought to have said prior to my application for a patent in January, 1852.

Russian Propokovitch, for he had frames in his hive a long time previous to myself; they were in fact very imperfect, but still they were frames." * * * * *

"But the claims of Langstroth to be the inventor of the frames, are nothing new to me, for in the summer of 1859, I received a visit from a most intelligent American beekeeper, Phineas MacMahon, from Philadelphia, who expressed no little surprise when I showed him about eighty full frame hives, and told him that the frames had not been changed since 1851. The American then declared that now he had proof that Langstroth was not the inventor, only he wished to know how he could have heard of it, as I had as far as he knew, never published an illustration of the same."

I replied that I supposed this had been done by Paul Reinhard Backhaus, to whom I had sent some hives to America in 1851. Mr. King writes to me, "Langstroth's principal claims are the air space above the frames and the board above it with holes for passage of bees into supers (bell glasses or boxes)". That is, Langstroth's principal claims are based on the vacant space over the frames, and the cover with the bung-hole for the passage of bees into the bell glass. I can hardly comprehend how Langstroth can attach the slightest importance to such things which exist as a matter of course, for the merest beginner must comprehend that there must be at least so much space between the frames and the top that the bees can reach the bung-hole, and through that, the super. This vacant space must be at least one-fourth of an inch in height. * * * * *

The vacant space in Langstroth's hive, as it is described in his "Practical Treatise" of 1859, is, however, much too high. This hive moreover is so bad that even the most inexperienced beginner in Germany would condemn it. I myself do this most distinctly, and declare this hive decidedly impracticable. The above shows conclusively that I used hives with movable frames and employed glass supers long before Langstroth's patent. * * * Langstroth does not seem to be familiar with bee-literature, otherwise he would know that beekeepers have had vessels of glass or other material, built full of honey by means of the bung-hole, for centuries past, a long time before the movable frame was invented." The Baron after describing the hive sent to Mr. King, so that it may be properly identified, concludes his declaration thus: "But this sort of a hive has gone out of date a long time since and in all Germany as well as in the rest of Europe, those shapes have been introduced a long time since, which I have described in my work on bees, 2d edition. It has no longer any practical value in bee-culture, but as a specimen of that first invention it will prove in case of Otis v. King, that long before Mr. Langstroth applied for his patent, there were used in Germany and the rest of Europe, hives with frames. Many witnesses can be brought who can swear to it that I have raised bees in frame hives at Seebach Castle ever since 1843, and made the improvement of these hives my special study."

Having thus given the substance of the Baron's declaration, I shall before commenting upon it, give also the substances of his communications to the *Beienenzeitung* prior to the publication in 1855, of the first edition of his work on bees.

THE BERLEPSCH FRAMES.

In a communication published in the Supplement to the *Beienenzeitung*, No. 9, May 1st, 1853, the Baron says he sends to the Editor a sample of a hive invented by him and called "*Stehender Rahmenlüfter*" (upright frame ventilator) which he regards as "the most perfect hive then known." It is said he, "partly a glass hive, a perfect ventilator and perfect Dzierzon."

In internal arrangement, he said "it is unequalled, and the inner space may be enlarged or diminished at pleasure, and every comb taken out." It is "less squat and clumsy than the Dzierzon hive, has not the cold but the warm arrangement of combs; each comb may be removed without cutting; and building them fast to the sides or bottom by the bees, is rendered absolutely impossible." Nevertheless he thought this hive would never come into general use, or exert any influence on bee-culture regarded as a branch of industry; because with all its simplicity in the view of an intelligent beekeeper, it is "too complicated and too costly for the ordinary peasant." Finally he requests the editor, if conceding the hive is what he (Berlepsch) claims it to be, "to describe and illustrate it in the *Beienenzeitung*; otherwise to consign it to his lumber garret."

In a note to this article, the editor speaks of the "*Rahmenlüfter*" as ingeniously devised, adopting and combining what is valuable in previous inventions, and presenting some advantageous peculiarities of its own, and as being "well calculated to be used with satisfaction by an expert, possessing the necessary pecuniary means." At the same time, he concurs with the Baron's opinion that the hive is "too complicated and dear," and hence not likely to come into use extensively, though it may be employed by amateur beekeepers and investigators." No description or illustration of it is given, however, and its peculiar construction could only be guessed at.

In the Extra Supplement to the *Beienenzeitung*, No. 21, Nov. 1st, 1853, is contained the first subsequent reference to the *Rahmenlüfter*, by the Baron, or any one else. It is a letter addressed to Dzierzon, censuring him for having written and published a book imperfectly explaining his system, and inadequately describing his hive. "I blame you for this," says he, "that for four years—from 1848 to 1851, inclusive—I have had in use, under the name of Dzierzon, hives entirely different from yours, and basing my judgment on those monsters, have spoken disparagingly of your hives and your methods, to the numerous beekeepers visiting me at Seebach, thus exposing myself to deserved derision. * * * * *

I was constrained to let my carpenter work according to those nearly unintelligible intimations. Very soon I had fifty handsome single hives made (costing me more than \$200), and I began eagerly to *Dzierzonise*, but with the poorest results. Already, in 1849, doubts arose in my mind as to the correct construction of those hives, because I could seldom get out a comb without breaking it, and sometimes the whole internal structure would topple down, forcing me to conclude that your whole device was based on a sandy foundation, and the use of my so-called Dzierzons was abandoned, and the remainder were managed on the swarming system."

But your fame was constantly spreading farther, and being fully convinced of the correctness of your theory, I travelled *incognito* to Brieg, in the fall of 1851, and thence afoot to Bankwitz, carrying a small valise, finally wending my way to Carlsmarkt. There I presented myself to you as a traveling overseer from Meissen, in search of a situation, who was unwilling to miss the opportunity when passing through Silesia, to see the most celebrated apiarian of his day, and examine his apiary. As regards bee-culture, I demeaned myself as an ignoramus, allowing you to exhibit and explain everything. At a glance I saw that my hives bore scarcely any resemblance to yours, and were of course, unserviceable. I was ready to jump out of my skin, not only because of the heavy pecuniary loss I had incurred, but for the more heavy loss of four years time, and the manifest derision to which I had exposed myself. * * * * *

As for the

rest, one might like the Gallitzean forester, be ready to flog one's self for stupidity in not having long since hit upon your invention. How near did Huber come to it? how near Propokovitsch? how near, I myself? Only think, in 1843, induced by the description and illustration of the Propokovitsch hive, I constructed one in which each comb hung in a frame and could be taken out. I also cemented guide combs to the frames, and all worked exceedingly well, except that in no conceivable manner could I fasten the separate frames properly in the hive or case, made in all respects like yours with a door behind. It was, and ever continued to be, a mere juggle, like Jähne's hoop hive. Had I inserted the frames *crosswise* instead of *lengthwise*, I should have had your hive earlier than you had it yourself, and should not have had occasion to solicit Mr. Schmidt, as I now do most earnestly, to dispatch the model *Rahmenlüfter* to his lumber garret.*

On this occasion, and in the letter from which I have been quoting, the Baron presents to the notice of Dzierzon and invites his criticism of his twenty-eight hive Bee Pavillon, of which he gives an extended and minute description, together with an engraved illustration.

This article was written and dated October 12th, 1852 (just one week after my patent issued), and the Baron's description of his Pavillon, does not contain a word about *frames*, nor does the illustration show any; though the latter does show *bars*, and bars with guide combs attached. We hear nothing more about frames in a Berlepsch or a Dzierzon hive, till in the Extra Supplement to the *Bienenzeitung* issued March, 1853. The Baron then writes to Dzierzon (Feb. 16th, 1853), "There are now no longer any bars in the (Pavillon) hives, but frames exclusively, so that the combs are suspended on all four sides between wood, and cannot possibly break down. These frames which I have had in my *Rahmenlüfter* since 1843, are by far more convenient than bars. With them it is never necessary to cut loose the combs from the sides of the hives (which is always a smeary job), but one can draw out the entire frame with the comb built in it. It is true these frames make the hive much dearer, for they must be made by an expert carpenter, so that they may neither warp nor part, and therefore for economical reasons, I omitted them at first in this new hive." Still the Baron did not formally advocate or defend their use till March 8th, 1855, when he appended some notes in their behalf to a communication which appeared in the *Bienenzeitung* of March 15th, 1855.

I shall now contrast some of the statements made by the Baron in his "declaration," with others contained in the above letters.

In his second letter the Baron speaks of having exposed himself to "deserved derision" by condemning a hive, the plan of which he never understood, while in his declaration he seems to speak as though in 1843 he was so well acquainted with it that he recognized at a glance the importance of the invention, and sought to improve it by substituting frames for bars. In his letter he says: "In no conceivable manner could I fasten the separate frames properly in the hive or case made in all respects like yours, with a door behind. It was and ever continued to be a mere juggle," &c.,* while in the declaration, he says that in the winter of 1850-51, "there was no obstacle to replace the frames at your pleasure; that in short the practical frame as it still exists to-day was invented—that practical experience in the summer of 1851 confirmed the invention, and that in 1859 he showed an

American about eighty full hives and told him that the frames had not been changed since 1851." Some of the statements in the declaration, as to the practical success of his frames in 1850-51, seem the more difficult of explanation, when compared with others made by the Baron in the *Bienenzeitung* for February 1853, in which he says in substance: "After I had satisfied myself by the experiments of 1851 that normally the queen is the mother not only of the workers, but of the drones also, I became exceedingly anxious to see her supply drone cells with eggs. I wished to obtain ocular demonstration of the fact. To this end, in the fall of 1854, having meantime examined properly constructed Dzierzon hives at his apiary, I made one like them, only that it had a glass door in the rear, with a wooden cover over it. It was made of such width as to suit the combs of some of my old hives; and about the middle of October, I selected sixteen combs containing a sufficient winter supply of honey, but consisting of worker-cells exclusively. There was not a single drone-cell in any of these combs. I inserted and arranged them in two tiers, one above the other, and introduced into the hive a strong colony with a young queen. In the spring of 1853, I fed them lavishly with slightly diluted honey, two weeks before the rape came into blossom; and on the evening of the 12th of May, the bees began to hang out in clusters. On the 16th I observed that on all the combs the cells not stored with honey were filled with brood. I now took out the first comb of the lower tier facing the glass door, and inserted one containing chiefly drone cells, there being only about 250 worker cells in a portion of it."

The Baron next details with all the glowing enthusiasm of a genuine naturalist, his first sight of a normal queen laying eggs successively in drone and worker cells on the same comb. Now if his frames in the summer of 1851 were a practical success, where was the necessity of his constructing a Dzierzon hive, and transferring bees and combs into it, for an observation which could as well if not better have been made in his own hive? If however, his frames were inserted lengthwise instead of crosswise, we can easily see why he adopted in the fall of 1851, the crosswise arrangement, in order that he might see the queen on the outside comb through the glass door at the back of his new hive.

I deeply regret that Mr. King, by the wide circulation which he has given to the Baron's declaration, has compelled me in strict self-defence to seem to censure a man whose name I have never mentioned without respect. It is hardly necessary for me to say that American beekeepers have such a just appreciation of the great services which the Baron von Berlepsch has rendered to apian pursuits, that they will not judge him harshly, even if they cannot satisfactorily harmonize some of his statements.

I do not at all complain that the Baron has pronounced my claim to have invented frames, to be "ridiculous," when he supposes that I call myself the absolute inventor of frames of every kind, and the first to have removed surplus honey in glass or other supers! Believing that I have made such insufferable pretensions, he might very naturally suspect that I was base enough to patent his invention as my own.* Can any one who has read the Declaration, be at any loss to conjecture by whom he was so grossly misled as to the true nature and extent of my claims? Mr. King might doubtless not only have informed the Baron what I actually claim, but have given him

* Let any one attempt to adjust, Propokovitsch fashion, *lengthwise* instead of *crosswise*, in a hive opening at the back, three tiers of frames, one above the other, and he will quickly understand the Baron's "juggle."

* I never heard of the Baron of Berlepsch until informed by Mr. Wagner, in August, 1852, of his article in the May number of the *Bienenzeitung*; nor of P. R. Backhaus, until the "declaration" was given to the public.

besides, the date of my application for a patent, Jan. 6th, 1852, four months before the Berlepsch hive was brought to the notice of the public. If he had done this, does any one believe that he would have brought the Declaration over the ocean?

The Baron's condemnation of my hives as "decidedly impracticable" may at first surprise those who have secured tons of honey from them; but it will not weigh much with them after they have learned from his own account, how entirely he failed, until he actually saw it, to get any proper conception of the Dzierzon hive.*

If the Baron and myself could have a personal interview, I believe that all misconceptions on both sides might be easily removed. I think that he would be amused to learn that it was the sight, on the table of a friend, thirty-four years ago, of a large bell-glass super, filled with beautiful honeycombs, that induced me to purchase my first stock of bees. If we should discuss "bee literature," he would be surprised to learn that in 1790, the Abbé Della Rocca (Vol. 3. Pl. 3) gave an illustration of movable bars with wings similar to his own, for keeping the bars at proper distances. If we should venture upon the still broader field of *unpublished experiments*, Mr. King could speedily make us much more ashamed of our "stupidity than the Galitzian forester," by presenting to us an inventor, who before the era of Propokovitch, and while still a youth in his teens, did by one surprising bound of genius, attain results which cost us so many toilsome years of observation and experiment. And if we needed anything more to make us humble, there might be "summoned from the vasty deep," such a crowd of republican aspirants to Huber's throne, that like the despairing Macbeth, we should be ready to cry out

"What! will the line stretch out until the crack of doom?"

Another yet? a seventh? I'll see no more!"

The Baron and my readers will excuse me for attempting by a touch of pleasantry, to relieve this very dry discussion.

L. L. LANGSTROTH.

Oxford, O., Jan. 12, 1872.

*It is not unusual for men of great ability to get very imperfect conceptions from drawings, while others quite inferior in intellect, can learn as much from a drawing as from a full-sized model.

[For the American Bee Journal.]

Overstocking with Bees.

And how to secure a large income from Bee-keeping.

In one of his writings on bee-culture, the Baron of Ehrenfels states, that he owned a thousand hives of bees, all of which were so located, that he could visit them in an hour's ride; and that he moved them during the buckwheat bloom to the rich district of the Marchfeld. He seems to have written under the impression that a good location could not be overstocked with bees. He started his several apiaries with one hundred and fifty colonies, each in the spring; and keeping for each apiary one overseer or beemaster.

Lucas, another prominent beekeeper and writer on bees, in his treatise published in 1820, concedes that a location might become overstocked, if the bees of many different apiaries

should be moved to a single locality, as there might then be more bees than flowers on which they could work. At the same time he is of the opinion, that the honey secreted by a flower could be and ought to be collected as fast as it is secreted. If it was not thus collected, it would evaporate and be lost. Hence it was all the same whether a blossom was visited once or oftener during the day, and it would yield the same amount of honey at every collection; while none would be left after a change of weather, or if not collected at the time it was secreted. Is this indeed so? I cannot say that I made a close observation on any other than basswood and buckwheat blossoms. Basswood secretes its honey in five little leaflets, that constitute the envelope of the bud before blooming. These little leaflets contain, in good weather and in a good season, a drop of honey as large as and sometimes larger than a large pin's head; and a bee can gather a good load of honey from a dozen of these flowers. This honey is not washed out by a moderate shower of rain, or by dew during night time. If not gathered it is found there for a number of days, and in warm dry weather becomes as thick as the thickest honey in a hive. In some instances the leaflets containing that honey, wilt, dry up, and remain adherent in the seed bud for quite a while, and bees will visit them sometimes for more than a week after blooming. Last summer dried up honey was found in them for about ten days after they had dropped off, and bees were seen in large numbers every forenoon, collecting from them bass honey, that had become liquified during the previous night. About noon they would cease gathering, and stopped flying. I hold that this honey is of greater thickness than honey just secreted, and bees will be able to lay up in store for their owner, a larger amount if they have a chance to gather it in a locality close at hand. There can be no doubt that the area in which the bees of an apiary collect their honey, must be enlarged in proportion to the number of stocks kept; and they will be able to collect all the honey secreted every day, if there are enough bees to do so, and the honey will then have no time to evaporate or thicken. Quinby states somewhere in his "mysteries of beekeeping explained," that the pasturage for bees ought to be within half a mile of the apiary, to be of much value to them. I am willing to extend that distance to a mile; but the question is not the distance to which bees fly and gather, but how many stocks could and ought to be kept in one location, with the greatest profit to the beekeeper. Since it is evident that honey does thicken and is not lost if not gathered immediately, it must be evident, also, that the smaller the number of stocks kept in the vicinity of the pasturage, the smaller must be the ability of the bees to visit every flower, or to visit them repeatedly during the day, and the thicker must be the honey gathered. Of course the state of the atmosphere has a certain influence, as well on the secretion of honey, as on the thickening of it. Rain washes the honey out of most kinds of flowers; and we find bees lying idle after a shower, while white

clover is in blossom, whereas they continue to gather honey during a moderate rain in basswood blossom time. To come to an answer of my question, it is not necessary to investigate the influence of the weather on the secretion of honey in flowers. This is a matter we cannot change. We have to take the season as it is—whether it be a good one, or a poor one. The location of my home apiary is doubtless a poor one, so far as gathering white clover honey is concerned; but honey in basswood blossoms is as abundant here as anywhere; and I have satisfied myself that I can secure a fair amount of surplus honey, if I aim at that, instead of working for an increase of stock or pure queen bees. Five years ago was a good season for basswood honey. My bees—at that time numbering three hundred and ninety-three colonies in my home apiary, after swarming—worked fully as lively as they did this season. The weather was as good during the time of basswood blossoms, as it was this season, and basswood flowers were as abundant also. After gathering for a week, a number of stocks were examined, and while the combs were nearly all filled with honey, the bees had just commenced sealing it. This season, when I commenced with only one hundred and thirty-seven colonies in the spring, and had during basswood blossoms only about two hundred stocks at my home apiary, the stocks I examined on the third day after they commenced gathering from basswood blossoms, had sealed quite a quantity of honey. All stocks that were supplied with boxes gave a fair amount of honey; and a number of double hives that I had erected, could be emptied every three or four days, having commenced to seal their honey. Five years ago, only a small number of stocks had made box honey, most of the hives had just commenced, when basswood blossoms were over; and on examination a week or two afterwards, I found that nearly every stock had more empty combs in the brood chamber than they needed. No doubt the thin honey had shrunk much in thickening, and the consequence was the bees had to empty some of the combs, to prepare others for sealing over. In my northern apiary, where I had only about one hundred and fifty hives that season, the brood chamber of the hives was full, and I got a satisfactory amount of box honey. Being fully convinced then that I had too many stocks in my home apiary, I concluded to start my southern apiary, with one hundred stocks taken from the former.

Last year, when I had more than two hundred hives at home, after swarming, my average yield of honey was only about nineteen pounds per hive. This year, by using empty combs enough to fill twenty double hives, and some boxes partly filled with combs, I got two thousand and fifty (2,050) pounds of box honey, and a little over four thousand (4,000) pounds of extracted honey—or an average of about forty-four pounds per hive; and I had taken from those one hundred and thirty-seven hives I started with, fifty-six divided colonies and swarms to my northern apiary, thirty-three to a location four miles east, and twenty-nine three miles

south. These one hundred and eighteen colonies gathered and stored a little over twenty-three hundred (2300) pounds of honey in the comb in boxes, and gave seventeen maiden swarms saved, besides several that went off and were lost. This amount, added to that gathered at home, would increase the average yield of the original one hundred and thirty-seven stocks at home, to nearly sixty-one pounds, by an increase of one hundred and ninety-eight new colonies.

The thirty-three colonies moved east from my home apiary, were a very weak and poor lot of stocks that had either been queenless last spring, or *artificial stocks* with only three or four combs. They gave eight swarms and a little over eight hundred (800) pounds of box honey. I am fully satisfied, that most of them would have been unable to store a winter's supply if kept at home. But where I had put them, they had nearly the whole field to themselves, as only twelve colonies besides were kept by other parties, in their range of flight.

I have often watched bees gathering honey from flowers in locations where bees were plenty. They went over them very fast, and often were followed in half a minute by others, that did not even stop for an experiment of collecting honey from the same flowers. Such bees necessarily lose much time in their search for flowers that contain honey, even if it be conceded that honey is secreted continuously during the blooming of the flowers; and then too, such honey will not have had time to thicken, and the bees will in addition, lose much time in waiting for the thickening of such honey after it has been gathered.

I well know that bees fly two, three, or four miles, in a time of scarcity, but I have noticed that the stocks gain little if any at such a time. Five years ago my Italian bees were found in great numbers in a field of white clover, three and a half miles from home. At that time they gathered just enough to sustain themselves; while about a dozen colonies kept only one-fourth of a mile from the same field were working actively in boxes. In former days I sometimes stated that during basswood time, a thousand colonies could be kept in one location, and all would do well. I have somewhat changed my mind on that point. The bees of those thousand colonies, if in good condition, would perhaps gather honey enough to winter on; but they would lay up very little honey for their owner. They would gather the honey, in their range of flight, as fast as it was secreted, and many bees would visit blossoms that had already been rifled only a moment before. The honey gathered would be a very thin article, subject to large shrinkage, after collection; and instead of still finding luxury ten days after basswood blossoms are over, every drop would be gathered when it ceased to flow. I am fully satisfied that a beekeeper would not get as much surplus honey from a thousand colonies kept in one location, as he would from one hundred. And then, outside of the basswood season, they would not be able to collect enough to feed their brood and sustain themselves. They would continually lurk around among their neighbors,

for the sake of espying a chance to steal a little, and a continual feud would be going on.

Bees, too, seem to know that there are too many of them, if a large number is kept in one location. When I had less than a hundred colonies in one location, I obtained in ordinary good seasons a swarm from nearly every hive. When I had a hundred or more, the swarming propensity decreased. Of three hundred and four (304) colonies, wintered out and kept in one location, I received only about fifty natural swarms, although I had not sought to prevent swarming. This season I had in my southern apiary, from one hundred and five colonies only sixty-eight swarms; and those colonies and swarms, with ten artificial swarms, gave four thousand (4,000) pounds box honey, and twenty-eight hundred (2800) pounds of extracted honey. After my spring's sale, I had in my northern apiary, only forty-three colonies (not forty-eight, as my daughter reported by mistake), and with the exception of a dozen colonies of second quality only—four of them queenless in the spring. They produced fifteen hundred (1500) pounds of box and thirty-seven hundred (3700) pounds of extracted honey, and increased to eighty-six good colonies. Their average yield of honey was nearly one hundred and twenty-one (121) pounds per hive, while that of the stocks in my southern apiary, nearly all of which were in prime condition in the spring, was only about sixty-four (64) pounds per hive—being little more than half as much. I have not overlooked the fact that they gave about three pounds more of box honey per hive; but their average weight per hive, when wintered in this fall, was nearly five pounds less than that of the stocks in my northern apiary. It seems therefore that a hundred colonies, in one location, are a larger number of stocks than should be commenced with in the spring.

There is no question with me any longer, that the smaller the number of stocks kept in one location, the greater will be the yield of honey from a single colony. But the question is not, how can a beekeeper secure the largest yield of honey from a small number of stocks, but how can he secure the largest income by keeping bees? In answer to this question I will say, by keeping and managing well a large number of stocks scattered in different apiaries, none of which should contain more than one hundred colonies in the spring. If he could arrange so as not to start with more than fifty in one location in the spring, it would probably be all the better. If placed three miles apart there will be no danger of *overstocking*, in ordinary seasons. A boy or girl twelve or fifteen years old can watch such an apiary in swarming time, and outside of it an active apiarian could superintend a dozen such apiaries. Of course he can only do this if the bees are worked for box honey, and everything is prepared and in readiness when wanted. But if the bees are kept to secure extracted honey, a competent person must take charge of each apiary during the honey season. If double hives are prepared before the beginning of the honey season, a good keeper might work about sixty hives, if he had

his stocks in a condition that they would not trouble him much with swarming, while busied with extracting honey.

A. GRIMM.

Jefferson, Wis., Nov. 29, 1871.

[For the American Bee Journal.]

Non-Flying Fertilization.

MR. EDITOR:—To undeceive those who have been misled, and to guide those aright who are in search of the true track, we subjoin a minute and accurate description of our arrangements and method to secure the fertilization of queen bees in confinement.

1. We build the fertilizing room, which is in dimensions six feet by eight, and eight feet high to the square. This room is studded, as though we were going to weatherboard it. We put in a frame, two feet by three, at one corner for a door. We make a tight floor, and beside plank up the sides and ends two feet high, commencing at the bottom. We now get eighteen yards of common brown cotton cloth (not too open), cut it in two pieces of nine yards each, sewing the two together lengthwise. These two widths of the cloth will cover the remaining open space not planked up, with the exception of the top and door. It is best to stretch the cloth on the inner side, putting in a tack now and then, until it is tightly stretched all around. It will take two persons to accomplish this in order to have it done right. After getting it stretched tight, lay a strip of wood or a lath over the cloth on each studding and nail it down. This will prevent the wind from tearing the cloth loose. Also tack the cloth to the edge of the plank all around, placing a strip over the edges as over the studding. Having done this much, we finish the roof by getting us a pole or studding ten feet long, which we set upright in the centre of our room, nailing it fast to the floor, and bracing it by nailing to it four braces, four or five feet from the floor, nailing the foot of each brace to the floor. We now get sixteen yards of common dark calico, have it cut into six bias pieces and sew them up, when they will be in tent shape. We leave an opening at the top for our pole, having a gum strap fastened in said opening, that it may fit *tightly* around the pole, coming down on a pin which we have put through, two or three inches from the top. We now tack the bottom edges of the calico to the inside of our frame, covering or overlapping the tip edge of the cotton cloth. We now have a house whose roof is made of calico in tent shape. We next make a tight fitting door of plank, leaving an opening near the top, twelve or fifteen inches square. This opening we cover with a piece of No. 13 or No. 16 wire cloth. In the far end from the door, and near the top of the room, we arrange a shelf upon which we place old honey combs, the cells of the upper side of which we fill with sweetened water and honey. We are now through with the fertilizing room; but have just reached that part of the programme *which is to be strictly followed, or*

you will fail in every instance. Although it may seem that all is yet to be done is merely to set in the room a colony or nucleus with an unfertile queen with plenty of drones and the work will be done, I tell you this is not so, for you may make the finest greenhouse in the world, and fill it with all the honey-producing plants, even though you have enough to produce honey sufficient for ten or twelve strong colonies, and yet you will fail to have queens fertilized therein. And why? *From the simple fact that the drone is intimidated by the presence of the fiery workers!* If you so arrange it that the drones and queen can fly in and out, while the workers cannot, you have it right. I know some of you have already said it cannot be done. Well, we shall see.

2. In the first place, we never raise our queens in little boxes, six or eight inches square. We form our nucleus in our hives, four to a hive, with three full sized brood frames to each, by using division boards—letting the bees out from one in front, from another at the back, and one out at each end. Thus they do not conflict with each other; and should you on any occasion let them fly in the air for fertilization, the young queen will seldom get into the wrong place when she returns. We raise our queen cells in the full colony, discarding every cell that is not capped over by the ninth day, and especially all the small ones. We insert our queen cells in our nucleus, and on the top of the board that covers this nucleus, we paste a piece of paper, on which we note the time when it will hatch. We now make some *fertilizing boxes* (so called). These are all made so that they will receive two brood frames each. Let the frames hang upon a small strip tacked on the inside. Have your boxes wide enough that you can easily get your finger and thumb between, to handle the frames readily. Make the bottom of these boxes of No. 10 or No. 12 wire cloth. When the frames are hung in the boxes they should not touch the wire bottom. Nail a strip three-eighths of an inch square on top of the wire cloth, all around the bottom of the box. This is to hold the wire cloth up off the brood frames, upon which we shall presently place it. We now have several queens which have just hatched. We go to a strong colony, open it, and pick out two combs that have plenty of maturing workers with their heads sticking out of the cells. They are making their first appearance. We shake (not brush) all the bees off; if there is only one left, we pick him off. *Be sure not to leave a single worker on these two combs.* We now place these two combs in our wire-bottomed box. (We forgot to say that we have a three-quarter inch hole in one end of this box, near the bottom, with a button over it). We then go to a hive that has plenty of fine drones. We open it and select (not an old drone that has been flying in and out of the hive for weeks, but) those that have light-colored heads. They are young drones, which have never yet seen the outer world; and when you turn them loose in the house we have built, they will not know but that is the dimensions of the world in which they are to play their part and die. But if you

take an old fellow, he is like a spoiled child. When you attempt to curb him he will laugh and attempt to get out. We put these young drones in our wire-bottom box, through the three-quarter inch hole, for it will not do to take off the cap of the box, as the young bees just hatched would crawl out. We next go to our nucleus hive and put in the young queen. Then we place these boxes over the brood frames of a strong colony, and let them remain there five or six days. At the end of that time, we take off the boxes with the young unfertile queens, drones, and young workers, and set them on the floor of the fertilizing house which we built at the beginning.

3. Let us now see what we have in these boxes. *First*, a young unfertile queen, six or seven days old, anxious to meet the drone. She passes in and out, three or four times a day. *Second*, we have twenty or more drones, that have never flown in the open air. They are not conscious of a larger, brighter world abroad. They fly around and around and are satisfied—even glad to know that they have such a world as this, free from the fiery old workers. Here they have it all to themselves. *Third*, we have a fine lot of young workers, *only six or seven days old*, too young by ten or fifteen days to leave the combs, even for play. Do you now think we let the queen and drones fly without the workers?

As soon as a queen begins to lay, we remove the box, making up a colony from the frames that were in them, and giving it the queen. If not, we place these boxes out under a shed, setting them on an old blanket or other woollen cloth, until such time as we wish to use them.

When we want more queens fertilized, we proceed as above. We never leave any of those boxes in the fertilizing house till the workers begin to fly out. Herein is the *whole secret of fertilizing in confinement*: **KEEP OUT THE WORKERS.** We know that when the queen meets the drone on the wing naturally, the workers are far beyond, at a distance, sipping nectar from the flowers. During the month of June, when we have thousands of drones, if you wish to know where the *drone yard* is, take the course that your bees are flying from the apiary, and by the time you have traveled six or eight hundred yards, you will come to a place where the whole atmosphere seems filled with bees. No man ever heard more buzzing. Some would think that a large colony of bees was passing overhead. No, they are the drones from your apiary. Here are tens of thousands of them. When your young queen leaves the apiary, she takes the same course, led by the hum of both workers and drones. On and on she goes, and before she is aware of it, she has reached the desired haven. But do you find any workers flying around in this locality? None, not one. They are all far beyond, in the fields.

Now, brother beekeepers, I fear I have wearied you; but it takes considerable space to explain this non-flying fertilization, so as to make it fully comprehended. Although I have been very particular to describe it in detail, I doubt not some will fail to understand it, for I know that it is next to impossible for half a dozen men

to read an article, and all understand it alike. If there are any questions to be asked, please ask them through the Journal, between this time and the first of April, as I shall be too busy after that date to furnish answers. When any man tells you he has had queens fertilized *in the hive*, and *four at a time*, just tell him from me that he says—what's not true.

No man ever yet contracted the entrance to his hive and let out the workers, and kept the *unfertilized queen from coming out*, and thus had her fertilized in the hive. If he did, all I have to say is that he either has larger young queens than I have, or his workers are smaller than mine. It can't be done! I have had many queens fertilized, last season, by the foregoing method, carrying out every manœuvre just as I have presented them; and my old fertilizing room now stands in Mr. Moffett's yard, in Trimble county, Kentucky, where I had my apiary the past summer. But whether I will build one here at Franklin, Ky., is not yet decided. I think I shall not have use for one, as I find but few colonies of black bees near me, and these I will Italianize early in the spring.

W. R. KING.

Franklin, Ky.

[For the American Bee Journal.]

Novice.

MR. EDITOR AND BEE JOURNAL FRIENDS in general: We are most happy to announce that our late indisposition has so nearly disappeared, that we are enjoying perhaps as good health as we ever did before. We are in fact feeling so jubilant over restored health—"that greatest earthly blessing"—that we can hardly refrain from persecuting even our friends of the Journal with some account of the way in which it was brought about.

For eighteen weeks our sole diet was lean meat, principally beefsteak; and for fourteen weeks we did not taste even so much as a crumb of bread, nor any vegetables of any kind. Of course brisk out-door exercise was absolutely necessary to digest such a diet, and when unable to walk or work, riding was kept up forenoon and afternoon, almost constantly.

After about twelve weeks, not only a pound of pure beef at a meal, but even four pounds per day, were eaten with pleasure; and when our physician informed us that we could safely take vegetable food once more, we did not care half as much about it, as we did the first month. We were told that the safest vegetable food to be taken at first was "cracked" wheat, or wheat ground in a coffee mill and boiled in simply pure water, with a little salt, of course. Our physician advised using a little butter; but we took the liberty of adding a little honey (remember that we had tasted none—not even a drop of anything sweet—for nearly five months), as we had a few jars of clover honey, put up in June, 1870, that was so thick it could be cut with a knife.

We find ourselves so well satisfied with the

above diet that we now eat scarcely anything else, except that and beef, and only hope that our readers will find it half as delicious, on trial, as we do, as we can finish almost any quantity with impunity for breakfast or dinner. We are allowed only beef for supper even now. We cannot speak as favorably of any fruits or vegetables. When we add that our weight increased seven pounds and a half in *seven days*, on the above regimen, we hope no one will accuse us of having a "passion" for steel-yards and spring scales.

Is it possible that any one can have faith enough in what we have just narrated, to be benefited thereby? That much abused "good old Dame Nature" will cure us of all ills as willingly as she mends a broken bone, if she only has *opportunity* and *materials*, is a fact which we fear is but very imperfectly realized.

On page 137 of the December number of the Journal, Jewel Davis asks for more precision in regard to our queen nursing. We certainly should have said—"You can thus cage all the cells in a hive, that would be available in the patented queen nursery, or by any other means." We hope owning a patent has not made him unskilful with unpatented devices.

On page 162, C. T. Smith, we fear, did not make his cages carefully, nor put them in place securely. When we described the device, we had given it a pretty fair trial, and had kept a number of queens caged thus until old enough to let their sister queens get fertilized and commence laying. Then they were removed and used, and the next in age released, and so on.

We always push the wire points past each other, which were then waxed together, so that they could not well fall out, and we cannot remember that we had any trouble in that way. After the yield of honey ceased, they "quarrelled" some, as we have before mentioned. If those who succeeded, and those who did not, could *ad* reply *this minute*, we should like to hear the result.

We certainly did not intend to speak of the queens we got from Mr. Grimm, in a fault-finding spirit. We were much pleased with them, considering the season in which they were reared (which we were informed of before buying), and the price we paid. We really were not aware until reminded, how our brief statement of our decision to send to Mr. Langstroth for a queen, seemed to reflect on those we purchased from Mr. Grimm.

Mr. Hazen's fear, on page 167, of overstocking a locality with a dozen hives, or less, sounds strangely as if he had read our Journal with insufficient care. When we had a dozen hives or less, our yield was nothing near, per hive, what it is now every year with over sixty. And

WHAT WE CANNOT DISCOVER

is a single instance, where large apiaries are yielding less, per hive, than small ones. We will try and not think this article too was written solely with a view of eliciting inquiries in regard to his patent hive, that the large results mentioned refer to.

HURRAH FOR GALLUP!

Old hats and new, give them a full vigorous swing and "three cheers," and HURRAH again!

Why, old fellow, what makes you so modest? Do you really mean to say that you have taken SIX HUNDRED (600) POUNDS of honey from one hive in one season, and been so quiet about it? Why we are going to make such a fuss, that you can hear us from "Maine to Mexico," when we beat it, next summer.

You don't tell us half enough about it. You gave them combs, you say; but really, now, did you give them no brood or young bees, as Mr. Hazen does? We have no fears that we can produce a ton, if that course be allowed.

We would like to state it thus—How many pounds of surplus honey can the progeny of one queen produce in a season?

One matter we almost forgot. Mr. Hazen speaks of bees starving on account of overstocking. Bless his heart, has no one ever told him that we now give our bees their winter supplies, as a farmer provides for his cattle and sheep; only we simply take about as much trouble to do it as would require to stack up the quantity of hay that an animal would need over winter, and turn them in the lot to keep themselves. Does he consider feeding "violence" too? After the several hundred pounds his bees have given him, does he let them starve? Does the "society for the prevention of cruelty to animals" not include insects among the objects of their care? If they do, oh, my! what a task they will have!

Mr. Editor, do we find too much fault? Somehow we fear our pen runs too much that way; and for that reason, in fact, we decided not to say a single word about the *Cleveland convention*, just to check any such lurking disposition. There was much there that we were pleased with, and many persons whom we were glad to meet, and things that we would not have missed under scarcely any consideration; but now look here, old pen, you'll just get yourself flopped away on the shelf, if you don't shut up. It's no business of yours if Mr. King did forget to tell us how he "loved Mr. Langstroth," as at the Cincinnati convention; nor why he changed his mind about being secretary, after publishing to the world in his paper, flatly that he wouldn't *no how*.* Of course he knew nothing derogatory to Mr. Langstroth's fair name, until he found that that gentleman could neither be *bought* nor *driven*; nor did he then, until he went to Europe with the fixed determination to "hunt up something!"

Once more, old pen, is it our business to start up. If the mass of beekeepers are satisfied to pass it all without notice or comment, why should we? If King's conventions are painful to us, we won't go to any more—that is, if we could only tell when he was going to preside."

We are sorry to see Mrs. Tupper's remarks on artificial swarming reported so different from what she did say—especially the latter part, which we fear would be rather exhaustive even

* "*Nolo episcopari*," is the cry of every hypocritical schemer. [Ed.]

to Iowa bees the past season. We presume the reporters did not notice it before it got into print.

And now, brother beekeepers all, hurrah for the rows of—not jars, but—barrels of honey this time. "Our better half" suggests *clean white barrels*. Whiskey barrels don't look well.

Barrels of honey for 1872; one from each hive, and from Gallup's hive two!

NOVICE, AS OF OLD.

[For the American Bee Journal.]

Notification.

MR. EDITOR:—Allow us, through the Journal, to inform its readers and save them the trouble of writing to us, that we are out of the Italian bee business and have neither queens nor colonies for sale. Six years' experience has satisfied us that we can make a more profitable use of our bees than to use them to breed queens at present prices. Hence we have withdrawn from the business, with the intention of never resuming it, except perhaps to accommodate a few personal friends with queens, when we have them to spare.

In this connection, we wish to say a few words in relation to our experience in buying queens, and to give

CREDIT WHERE CREDIT IS DUE.

We have bought quite a number of Italian queens; we have bought them both in the United States and in Europe; we have bought them of several different parties, and paid for them prices varying from seven francs to fifteen dollars, each. While, as a general rule, we have been fairly and honorably dealt with, and good queens have been sent to us—some of them valuable ones; justice to Mr. Langstroth requires that we should give him the credit of sending us the best and most valuable queen we have ever received, judging her by her prolificness and the uniform high color of her queen, drone, and worker progeny. We have bred queens from her to the fifth generation, with the same uniform high color of the workers from each succeeding generation of queens. We consider this a test of purity that is perfectly reliable, no matter how highly colored the queens, drones, and workers are.

WANTED!

In the summer of 1870 we had two queens not more than two-thirds of whose eggs would hatch workers; the remaining one-third would produce drones, though deposited in worker comb. We are in want of such a queen next year; and if any reader of the Journal who has one during the season of 1872, will send her to us by mail, we will reciprocate the favor in any way he may suggest. It is immaterial to us whether the queen is pure Italian, black, or mixed.

J. H. TOWNLEY.
Parma, Mich., Dec. 20, 1871.

☞ A queen that has been very prolific, will usually, when supersedure approaches, de-

posit eggs in worker cells, a portion of which, gradually increasing in number, will produce drones. She is almost certain to do this largely, if the period of superannuation happens to be in May or June:—The supply of spermatazoa in the spermatheca of such a queen being nearly exhausted, many of her eggs, though laid in worker cells, pass without impregnation. That such queens are unconscious of impotence in this regard, while they may have a foreboding of their impending fate, is evident from their continued oviposition in worker cells exclusively.—[Ed.]

[For the American Bee Journal.]

Transferring Bees.

There are, all through our country, great numbers of bees still in box hives, and some even in the old-fashioned hollow log, which, by the way, is just as good, or a little better. Many of our people have not yet discovered that to make beekeeping pay, the bees must be in movable comb hives. But they are waking up, not only to the importance of bee-culture, but to the necessity of having their bees under complete control.

Those who are not informed on the subject, regard it as a very formidable undertaking to transfer a colony of bees, stores and all, from an old hive to a new one; but those who have experience in it, find it unattended with difficulty. To be able to do it in the easiest manner, however, is quite an accomplishment in the beekeepers' art; and knowledge and skill have not yet made such advancement that improvement may not be made by the interchange of experiment and observation. And, with your permission, Mr. Editor, I will give some of the results of my little experience.

After trying nearly everything recommended for holding combs in place until the bees fasten them in frames. I have fallen back upon slender strips of wood held in place by wire. The strips should be made of tough straight-grained wood, and should be a little more than an eighth of an inch square. They should be long enough to reach a little above and a little below the frames, and have a notch in each end to receive the wires. Tough wire should be used, stiff enough to hold the sticks somewhat firmly, and yet not too stiff to be easily wrapped around the ends of the sticks. The wires should be cut about three inches long; half of the sticks should be counted out and a wire attached to each end of each stick, by two or three turns of the wire around it, in the notch, and then they are ready for use.

I use a transfer board, having blocks nailed on it to hold the frames in place while the comb is being filled in. It has also grooves to receive the sticks, which are to be fastened on the lower side of the frame as it lies on the transfer board. My frames being only twelve inches wide, I use two pairs of sticks to each frame. When every thing is ready, I lay down two of the sticks having the wires on them, in the grooves of the

transfer board, and lay the frame over them. The frame is prevented from getting out of place by the small block, nailed to the board. Having cut out a piece of comb of suitable size, I lay it on the frame, or, if not too wide, put the upper edge within the frame, pressing it against the under side of the top bar, and with a sharp knife trim the projecting edges of the comb, so that it can be forced down into the frame. This is much better than to lay the comb on the board and after having marked and trimmed it, spring the frame over it. It is quicker and more easily done, and there is less danger of injuring the comb. When the comb is in place, I lay two sticks having no wires attached, immediately over the two that are under the comb, wrap the ends of the wires around them, and raising up one end of the transfer board to bring the frame to a perpendicular position, put it into the hive.

Unless a hive is very populous, and the weather warm, I do not take the trouble to drive the bees out before transferring the combs. I smoke them pretty well before removing them from the old stand, giving them time to fill themselves with honey. I then carry the hive to a convenient place, set it down bottom upward, drive the bees down with smoke, and with a cold chisel cut the nails, and take off one side of the hive, so as to expose the combs to the best advantage. The tools needed, besides hatchet and cold chisel, are a long-bladed carying knife and a three-eighth inch iron rod having at one end a steel blade bent at a right angle, and about one inch and a half long from the angle to the point; and at the other end a handle such as is used for small chisels. This tool is about twenty inches long. It is used for cutting off combs which cannot be conveniently reached with a knife.

Four or five heads of broom corn tied securely and firmly together, are better than anything else I have tried, for brushing bees from the combs.

After placing the first comb in the new hive, I brush all the bees on combs subsequently cut out into it, that they may cluster on any brood it may contain. When all the combs are in the new hive, I shake the remaining bees down in front of it, let them go in, and then place it on the old stand. It is well always to place an empty hive, or a box of some kind, containing a piece of comb from the hive, on the old stand to receive and retain the returning bees, until the work is done. It is better that the comb contain unsealed brood.

I have transferred bees in March and in November, and in nearly every month between, and have never had them do otherwise than well. I have had less trouble with robbers in March and in October and November, than in May and June. It is not a good plan to transfer many colonies on the same day, unless it can be done in a house that will exclude robbers, as all the bees in the neighborhood will, after awhile, be attracted by the exposed honey.

M. MAHIN.

New Castle, Ind., Dec. 23, 1871.

[For the American Bee Journal.]

Notes of a Beginner.

MR. EDITOR, and beekeepers generally, *greeting*:—The honey season is past, and ere this we have all counted our profits, if not in dollars and cents altogether, then in bees and honey; and many a sweet morsel we shall enjoy during the winter. Some of us, too, are doubtless able to supply others with a portion, provided they pay for it. I say *us*, for I number myself now as a beekeeper, or at least as beginning to be. Though I have to acknowledge some failures, during the past season, yet, taking it altogether, as I had never handled a bee before, I am quite well satisfied with the summer's operations—which sum up as follows:

Commenced with 13 stocks, in almost	
all kind of hives, at a cost of \$8 each,	\$104 00
27 hives, at \$2 each,	54 00
2 queens, at \$2.50 each,	5 00

Total,	\$163 00
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An increase of 13 stocks, \$8 each,	\$104 00
Increase in value, by Italianizing,	55 00
600 lbs. of honey, at 20 cents per lb.,	120 00
1 swarm from the woods,	8 00

Total,	\$287 00
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The balance, \$124, may go to pay for time.

I do not give these figures because they show very great profit, but to give facts. I do believe that while a few will reach such figures as Novice and Grimm, the majority of beekeepers will only attain to a less amount. But, of course, in order to progress, each must strive to be one of the successful few.

NOVICE'S QUEEN NURSERY.

Immediately on receipt of the Journal, I made several, perhaps a dozen of these nurseries; but succeeded in saving only two queens by them. I guess I must have bungled somewhat; but Novice did not tell us how he had succeeded. Will he please tell us whether he has been successful with them? Novice says, after removing the wire cages, the combs would be uninjured. Now, in my operations the bees would in every case gnaw the comb on the inside of the cages, and the old ones on the outside; so that sometimes a piece of comb would fall out on removing the cage.

INTRODUCTION OF QUEENS.

I have been almost uniformly successful in introducing my queens this summer, by simply removing the black queen and immediately caging the Italian queen, and putting her between the combs at the top. In about twenty-four hours I would release her without any further ceremony, except that two or three times I used smoke or sweetened water. I also mixed up my bees, by changing frames, bees and all; and had no fighting but twice. Late this fall, however, I used chip smoke to unite my nuclei.

LANGSTROTH'S METHOD.

I would here say, that upon two occasions I found a young queen, just hatched, perhaps not over five hours old. I at once sought for and destroyed a black queen, and immediately without any ceremony, put her on a frame, holding it in my hand. She was well received, and has now a fair stock of bees as her progeny. They are hybrids. The other was introduced to a nucleus, from which I had taken the queen just a short time before. She was received without any molestation, and in due time given to a full stock.

THE HONEY EXTRACTOR.

I do not know but I overdid the thing by the use of my extractor. I did not get it finished as soon as I wished, so that some of my stocks were full of honey, and waiting for me. I think my figures would have been larger if I could have used the extractor earlier. I emptied most of the stocks twice. The second time about the middle of July. At this time most of my bees seemed to resent this kind of treatment, not by stinging, but by a sulky behavior. They seemed to stop working with their usual energy; yet they continued to work some till the last of July and August, but not to give me any surplus. Not suspecting that all would not be as well as could be, I did not examine them till some time in October. I then found no brood or eggs, and they were not as well stocked with bees as I should like them to be. But, still, all seemed to have honey in plenty. Now I suspect I ought to have fed them some in July; and this I acknowledge is my fault, for Mr. Langstroth gave me directions in full, in *Hive and Honey Bee*, but I did not follow it out to the letter.

A BEGINNER.

The writer's name became detached from his communication, and lost. Will he favor us with it?

[For the American Bee Journal.]

Satisfactory Results.

MR. EDITOR:—Once upon a time I promised the readers of our Journal that I would make a report of the season's operations (1871); but after looking over the reports of some in former numbers of the Journal, my faith in my ability to make the best report for the season was somewhat "dampened." For instance, when I read Katie Grimm's report, I thought "How wonderful is man" and the honey slinger, and yet how much more wonderful is a woman with such energy and strength! Indeed, my three hundred pounds of honey for one day's work, sunk into utter insignificance in comparison, and yet I am very well satisfied with the results of the season in my own case. Now for the figures.

The spring of 1871 found me in possession of twenty stocks of bees, about one-half of which were blacks, and the remainder Italians and hybrids. Five of the number came out of winter quarters so weak that I received no profit from them in swarms or honey. These colonies I built up without any aid from other stocks; and four

out of the five commenced with only two combs each, in the spring. From each of the five I have taken two queens, forcing them to supply themselves with others from sealed queen cells; and they are all now in prime condition for wintering, with their hives full of combs and bees.

Wishing to get all my stocks Italianized this season, from the other fifteen colonies I formed twelve nuclei for raising queens to supply my new swarms and Italianize my natives. This I succeeded in doing, without trouble; have sold about forty dollars' worth of queens to my neighbors, at reasonable figures; and am wintering ten queens in their nucleus hives, seven of which are purely fertilized.

My honey account for the season, stand as follows:

Pure white basswood honey, extracted,	700 lbs.
Mixed and dark, " " "	200 "
In small frames and boxes,	600 "
In large frames, in upper story,	200 "

Making in all, 1700 lbs.

The fifteen colonies have given me, besides, an increase of twenty swarms, all of which are in winter quarters in good condition.

In extracting I only operated on my old colonies, and such of the new ones as had been supplied with empty combs, except where I extracted from new combs for queen raising. And, by the way, I get much finer queens from new combs than I can get from old.

My honey I have sold at from twenty-three to twenty-eight cents per pound—averaging fully twenty-five cents.

The profit for the season would foot up as follows:

For honey sold (1200 lbs. at 25 cents per lb.),	\$300 00
Honey still on hand (500 lbs. at 25 cents),	125 00
Queens sold,	40 00
Twenty new swarms, worth \$10 each, exclusive of hives,	200 00

Making a total of \$665 00

Or, an average of \$44.33 per colony.

The colonies from which I extracted most freely, gave me the most box honey this fall, and are in much the best condition for winter, being better supplied with bees hatched late in the season. From this summer's experience with the extractor, I have come to the conclusion that, in a season like the past, all the honey we can get with the extractor is more than clear gain.

J. E. BENJAMIN.

Rockford, Iowa, Dec. 15, 1871.

[For the American Bee Journal.]

Timber for Honey Casks.

A correspondent of the Journal asks for information on this subject. I put my honey in ten gallon oaken casks, and do not perceive that they impart any taste foreign to the honey.

MR. GALLUP—WHERE IS HE?

Let's hear a word. There are some of us

(who did not send the dollar, of course,) who are waiting patiently for the promised description of his bee-hive. I am particularly interested, for I adopted the form given by him in the Journal some time since.

I bought up some stocks this fall, so that I have now in my cellar thirty-eight stocks in good condition, according to my poor judgment, and I am waiting anxiously for the end of a long winter, when the little workers will show how they have borne confinement. Till then, adieu.

H. H. PHELPS.

Pine Island, Minn.

[For the American Bee Journal.]

Report of Progress.

DEAR JOURNAL:—We always welcome your appearance on our tables, for well do we know that we shall gain some useful knowledge from your pages. How sorry we felt for Novice, when reading his article in the November number, and found that even he can get into trouble. Taking warning from his sad experience, we appointed ourself an investigating committee of one, and entered on duty at once. As we had used our extractor rather late in the season, we examined those hives first that we had taken from last, and found they had filled the empty combs about half full. These we had placed in the centre of the hive, as we returned them from the extractor. (Was that right?)

The past season was a good one for bees in this locality. They worked busily on buckwheat and smart weed until it was killed by the frost.

We commenced the season with twenty-six (26) stocks, and increased our number to forty-eight (48), and reared about seventy-five (75) queens. Our yield of surplus honey was not great, yet we found our stocks all in good condition for winter, except a few late swarms, which we supplied with full frames kept in reserve. Now, thought we, all are in good condition for winter, and dismissed the matter from our mind, giving our attention to visiting friends. But on moving our stocks to the cellar, we found that one weak one which we had supplied with honey had been robbed, and the bees were dead. We also found another stock dead, with abundance of honey. The bees were clustered just below the honey, some had crept into the cells, while others were clustered over them. Can any one tell us what killed those bees?

All our bees are Italians except some few hybrids. We have sold queens, bees and honey to an amount of one hundred and forty dollars, and have considerable honey on hand still. We sell all our honey at twenty-five cents per pound.

Flattering ourself that we had been rather successful in queen rearing, we determined to procure imported queens, and to be certain that they were imported, we concluded to play importer for once. Some time in August we ordered a package of eight queens from Edward Uhle. We waited with patience till the 12th of October, when they arrived by express. There was no time lost in bringing them home, and with

no small degree of anxiety did we proceed to examine box after box. To our surprise and joy we found every queen alive. We expressed one to a friend, and now came our trouble. Seven valuable queens to be introduced, and so very late in the season!

Yet the trial must be made. We caged the queens, destroyed those of the stocks, and immediately hung the cages containing the strangers into the several hives, left them thus four days, then raised the cages and tied over the top of each a bit of newspaper smeared with honey, replaced them, and left the bees to liberate the queens at will. On examining them ten days after we found each queen lively and perfectly at home among her American subjects.

If we are successful in wintering them, we shall be able to furnish pure Italian queens to all who may favor us with their orders next season. Having been successful in importing we shall continue to make new importations from time to time, in order to keep our stock good.

Mrs. K. A. D. MORGAN.

Pella, Iowa, Jan. 3, 1872.

[For the American Bee Journal.]

Report of a Season's Work.

MR. EDITOR:—Not having very much to do at present, I thought I would give the readers of your valuable Journal some account of my last season's operations.

On the first of May I found all my stocks in the weakest possible condition. There were forty-eight colonies in all, having lost twelve during the winter and spring from having forced queens. I raised several queens the previous season, and by the first of June every one was dead. Hence I consider forced queens of but little account, as I bought several such, and never had one to live a year from the time I got her.

Thus on the first of May I had forty-eight stands. They were so weak that I only got seventeen swarms from the whole. The first swarm came out on the ninth of June, and the remainder afterwards, up to the tenth of July. The first swarm gave me one hundred and twenty pounds of honey, and my bees, old and young, sixty-five stands, averaged me nearly eighty pounds of honey each. About one-half of this was extracted, for which I got fifteen cents per pound. For box honey I obtained twenty cents per pound. From the 1st to the 15th of August I took all the honey from each and every hive. After that they had nothing to work on but buckwheat. Some twenty-five stands made from eighty to eighty-five pounds of honey each. That is they filled their hives, which required from forty-five to fifty pounds, and filled besides some twenty-five boxes with from thirty-five to forty pounds each—all from buckwheat. The rest filled their boxes full and put from ten to thirty pounds in their boxes. Every hive I have on the place has rather too much honey, as they are not wintering well, and this is the greatest trouble I have in wintering bees. I have seen it

stated by some that their bees did not get enough honey to winter on. Now such a thing I have never known here. My pasture is all artificial now, but I have sold my farm and bought another in the grove, some six miles to the south. Here I am going to put out a large pasture, such as alsike clover, mellilot clover, and buckwheat. There are plenty of thorn bushes, wild plums, crab apples, elm, maple, and hickory trees, and not less than one hundred acres of basswood or linden trees within a mile of this location. If there is any honey in linden I expect to get some. I think I have the most favorable situation for bees that could be found in a long travel.

R. MILLER.

Malugin Grove, Ills.

[For the American Bee Journal.]

A Few Inquiries.

MR. EDITOR:—As the time has come around for my subscription I wish to ask a few questions.

1st. At what time does the "basswood" blossom in Central Illinois? I live on the prairie several miles from timber, and never saw basswood in bloom. I am thinking of planting a grove in the spring, and should be pleased to hear from parties having basswood trees for sale.

2d. At what age does the basswood tree begin to yield honey? Our honey supplies in this locality consist mainly of white clover, buckwheat and Spanish needles. In wet seasons bees have abundant pasturage, but in dry ones they "go for the grapes" and any other fruit that suits their taste. There are hundreds of pounds of grapes destroyed by bees in this neighborhood in the past two seasons.

Our town site is one mile square, and there were about four hundred colonies of bees located on that area last season, but owing to the drouth and the great number of bees, I fear a portion of them will fail to take wing in the spring of 1872.

I would also like to ask Mr. R. M. Argo if he kills more bees when manipulating his close fitting frames than he does when using frames that hang half an inch apart.

I close by proposing three cheers for Gallup and the American Bee Journal.

S. W. LOUD.

Virden, Ills., Jan. 8, 1872.

☞ We doubt whether the bees injured the grapes as charged. We have never yet been able to find one attacking a sound ripe grape, peach, or other fruit, though we have often seen them appropriating the juices of such as had been injured by wasps, or other insects, or birds—thus making themselves useful by gathering up and saving what would otherwise have been lost. Let grape growers and fruit culturists use their own eyes carefully in watching birds and insects, and they may be undeceived. The recently introduced European sparrow, however valuable it may possibly prove to be, as a caterpillar exterminator, is almost certain to do more damage to vineyards in one season than bees have done since the day that Noah became a vigneron.—[Ed.]

[For the American Bee Journal.]

Introducing Queens; or the Grand Modus Operandi.

MR. EDITOR:—Having tried many of the plans given in the Journal for introducing queens, I found there would still be some failures occasionally. Now here is a way that has proved sure every time: Make a box of the same dimensions as the hive, six or seven inches deep; nail on a board for a bottom; on the upper edge tack on cloth to prevent the escape of smoke; bore a hole through one of the sides to blow smoke through. When operating, set the hive on this box; then load your fumigator with puff-ball, and proceed as Mr. Quinby directs, and drop the bees. Look out for the queen, if she was not destroyed before you smoked the bees. The better way is to kill the black queen before smoking them, as then they do not need to be smoked so much. Have ready another box, about three inches deep, with bottom, and inch holes through its sides, covered with wire cloth, to let in fresh air. Put the bees in this box and set the hive over them. When the bees revive, and begin to climb up, put in your Italian queen, and keep the bees confined till next morning. They should also have upward ventilation.

Can some one tell me, through the Journal, how to keep my bees from swarming? I would rather have honey than swarms.

The past season was not as good as last year. My bees made one-third less honey this year than last.

PETER LIVINGSTON.

New Salem, N. Y., Dec. 28, 1871.

[For the American Bee Journal.]

Report from Pratt's Hollow, Madison Co., N. Y.

MR. EDITOR:—The commencement of our season here was poor, but by the 20th of June the bees began to get honey pretty freely, and so continued until the first of August, as our season ends early with the basswood bloom.

I hived one large swarm on the 16th of July, and in fifteen days they filled a common box hive and six 5 lb. boxes. I think I never saw bees get honey faster than they did this year from the basswood blossoms.

I began the season with twenty-five colonies. They increased to forty-five, mostly by natural swarming. I took from them—young swarms and all—nine thousand eight hundred (9,800) pounds of box honey, including weight of boxes, and sold it in that form at an average of twenty cents per pound.

I doubled a good many of my young swarms. I think that those I thus doubled averaged me sixty pounds of box honey per hive, while those that I hived singly did not average over fifteen pounds to the hive. Will it not pay to double young swarms, where they can be bought in the fall for five dollars each? I can buy plenty of black bees in this county, in box hives for that price.

I think the golden willows are a great help to bees in the spring. I was at my father's in Oneida county, about the first of May. There are a great many of those willows there, and I think his bees came in as loaded from them as they did here from the basswoods. This year the bees got such a start from the willows, that they commenced swarming as soon as the apple trees came in blossom, or say the 18th and 20th of May.

My best colony, this year, of black bees in a box hive, gave me one hundred and fifty (150) pounds of box honey. A good many of the boxes had a considerable amount of dry comb in them. I think I can get one-third more honey in that way than by single capping. My best half-blood colony gave me one hundred and twenty-five (125) pounds of box honey, with only the natural start combs in the boxes.

I had a few Italians and half-bloods. They commenced swarming about one week earlier than the blacks.

My bees were mostly in box hives. I could have got more from them if they had all been in shallow Langstroth hives. I am making a hundred Langstroth and a hundred Quinby hives for the coming season.

Probably twenty of my swarms went to the woods. One large swarm that I had trebled, started work in the hive, and continued about forty-eight hours, then left for the woods without alighting. I expected a hundred pounds of honey from it, if it had stayed.

G. T. FEARON.

Dec. 29, 1871.

[For the American Bee Journal.]

Queens, and Corresponding Hives.

On page 114 of the November number of the Journal, Mr. Benjamin says he feels sorry for friend Gallup. Now, save your sorrow, friend B., for we can stand any amount of such *pitching in*. But the amount of correspondence that I had before I sent that article charging the dollar, no live man could possibly stand. Those same chaps that have done the pitching in, would like to have Gallup devote his entire time to correspondents, and then kick him for not doing more. Still, this is not what we started for in this article. It is about that queen's laying herself to death in our Youreka, Back Action, Extractor, Reversible, Revolvable, Movable Comb, Twin Bee Hive. It is a well known fact, that some queens will lead out a swarm, fill a standard hive, lead out another swarm, and fill that hive, still lead out a third, and fill that hive also. And with us, such prolific queens are almost invariably long-lived. We have had them retain their full prolificness the fourth season, and do as well as a majority of queens still in their fifth season. But, suppose your figures are correct, and on my principle a queen will produce the workers to gather eight hundred (800) pounds of honey in one season; or, on the old plan, it takes her three years to produce the same result; we say, let her spread herself. There may be something more here

yet, that you have not thought of. We once removed a large swarm of bees (from a house) that had been there a number of years, and they had a queen as large again as a common one. Again, we removed a swarm from a large bass-wood log, and found the old queen a tremendous large one (not as large as an ox, but large for a queen). We also found extra large queen cells, and made three extra large swarms from the old log. Queens and queen cells were extra large, that were raised in our large colonies last season. The bees seem to expend large amounts of wax on the cells, and place an extra large amount of food in them. D. L. Adair, in his "Outlines of Bee-Culture," says, on page 13: "*It is found in practice, that the queen is more prolific in a hive where she is not crowded for room to deposit eggs, and the whole population is more industrious.*" And on page 17, he says: "*Queens raised in full sized chambers, are larger, more prolific, and live longer.*" &c. In practice, certainly, we agree with Mr. Adair. If this is correct, then, in an extra large colony, we can raise extra large queens to meet the emergency. So far, so good. Right here, we will say, that Mr. Adair's section hive is used in just as many forms, with the same size frames or sections, as we used in our hive. We obtained some valuable suggestions from him and his hive at the conventions last winter. After using the extractor, we formed an opinion of what we wanted for a hive, and we went to the conventions chock full of our ideas, and Mr. Adair was the only individual we found there that had formed the same opinions; or if others had, they kept them to themselves. We do not intend to use large hives exclusively, but in connection with our standard hives.

E. GALLUP.

Orchard, Iowa, Dec., 1871.

[For the American Bee Journal.]

Virgin Queens becoming Drone Layers.

One year ago last summer, I had at one time secured so many hatched queens and maturing queen cells, from stocks that had swarmed naturally, that I had a queen in each of my one hundred and three (103) nuclei then running, and quite a number of queens left which I preserved in nuclei that had no fertile queen. In a number of instances those extra queens were neglected or killed by the workers, as soon as the queen at liberty became fertile. A small number, however, was saved in such of these nuclei as had lost the queens at liberty, during their wedding flight. Much occupied, then, by other pressing work, I did not liberate those queens until they were fourteen days old. They were readily accepted by the workers, and I noticed some of them making their wedding flight the same day they were liberated. Three days afterwards I examined the nuclei containing those queens, and found five of them fertile and laying. This was on the seventeenth day after they were hatched. A few days later I had occasion to fill a large number of orders for un-

tested queens, and shipped those five among others. Think of my surprise when I found the progeny of all those five queens was drone brood in worker combs! Of course I had to send other queens immediately; but this turning drone layer at so early an age, was contrary to all my former experience. A queen that had hatched on April 4th, at the time when I wintered out my bees, did not commence laying until the forty-third day of her age, and laid worker eggs exclusively in worker cells for three months and a half, when she commenced intermingling some drone eggs among worker brood, and was then superseded. Three other queens hatched on April 15th, and at liberty in their hives, commenced laying drone eggs exclusively on the 23d day of their age. At one time in the month of September I had forty-five queens, none of which were impregnated, on account of cold, rainy weather prevailing, over three weeks old. The weather had changed, becoming fine and warm, and all these queens, except a few that were lost or killed, were impregnated in the course of two days, and became regularly fertile.

If the above reported experience of young queens becoming drone layers when caged fourteen days in warm weather, should be confirmed by further observation and corroborated by the experience of other queen breeders, it would seem to be established that virgin queens could not be kept long in cages or queen nurseries without detriment, even if they should not be neglected or killed by the bees in whose hives they are placed for preservation. I find, however, that worker bees that have a prolific, fertile queen in their hives, will try their best to destroy virgin queens kept in queen nurseries or cages—probably apprehensive that their own queen was in danger.

A. GRIMM.

Jefferson Wis., 1871.

[For the American Bee Journal.]

In Peace Prepare for War.

As there is not much to be done now that our pets are snugly stored away in their winter quarters, perhaps dreaming of better days, probably now is the most favorable time to mature our plans for the coming season.

We have read carefully the Journal for 1870 and 1871, and have been expecting to see somebody recommending for the management of bees, a plan like our own, or one very similar; but as we have not seen anything quite like it, we will give it for whatever it may be worth.

Mr. Editor, this is no new fangled thing. We have practiced it for the past ten years, with the best results. Like many readers of the Journal I am located where forage consists almost entirely of white and alsike clover; and those situated like myself will be the ones that will be benefited by my plan. Every beekeeper knows that, in such locations, the time for gathering honey is very short—at longest not more than sixty days. Now, if you expect much surplus,

you must have very populous stocks to gather it. Then comes the question, what do we consider strong stocks? Well, we consider a hive that did not swarm, a good stock, generally giving us a good surplus; and yet even such sometimes fail to come up to our standard. But we will now try and give you our plan for making working swarms. Let me here remark that my experience has been with black bees and natural swarming. The past season I introduced about twenty Italian and hybrid queens.

And now, Mr. Editor, for example, I have on hand fifty-four stocks, provided all come out right in the spring. Suppose these all send out a swarm each, fifty-four in number—what shall I do with so many swarms? I have only twenty empty hives, and am determined not to make any more, because it is *honey* that I am after, and if I should double my stock, I should not get honey enough to grease a pan-cake.

I will now try to explain how I manage. A few days before swarming commences, I locate all my empty hives in my yard, just where I want them to stand through the season. I have all swarms in a basket hive as they issue, and carry them to the hives designed for them. Do not forget to mark day and date on every hive both old and young. We will now take it for granted that you have already hived eight new swarms. Well, if any of them have been hived three, four or five days, it makes no particular difference, though we prefer four days. Now introduce another big swarm in each. But a neighbor tells us we could not put two of his swarms in one of our hives. Moonshine! We never had two swarms in our life, but we could make room for them, and keep them at work too, when anything sweet was to be found abroad. But we are off the track again. Well, we said put in another big swarm. But we want a fair fixing—half a dozen platforms, four feet long and three feet wide, made of inch boards. Nail two strips on the top, one at each side to project two inches, to clamp on the bottom board of the hive to be doubled up. A board, of course, is nailed at the other end, which makes it level with the hive that is to receive the swarm. Now, when you have nailed a lath on each side of your platform, to keep the bees from falling on the ground when they begin to scatter; one thing more, and we are ready for action. Raise the front of the hive that is to receive the swarm one inch. Of course, you have during the day taken off the honey board and covered the top with neat and handsome glass boxes. Our hive accommodates forty-five pounds in six boxes; or if the extractor is to be used, put on the upper story. All being in readiness, bring along your swarm in an old box hive, for as a matter of course you did not have them in a frame hive, because it would be quite a job to shake them out of the frames. Now, with one jerk drop the bees on your platform, one foot in front of the hive to run them in. They will scatter all around for a minute or two, but do not disturb them till they begin to travel for the hive; then keep them moving till all are in. The next morning set the hive level, but still raised on all

sides, three-eighths of an inch from the bottom board.

The reason why you want several boards or platforms, is, that you can be doubling up six or eight swarms at the same time, and you will do it in half an hour. One thing must not be forgotten—this operation must be done after sundown, and when it is nearly dark. The swarms will then unite without the loss of a single bee. Now double up all your new swarms as fast as possible, for every day counts. At the same time keep making new ones, till you have used up all your hives. We take it for granted that you have now made fifteen new swarms all doubled up thirty single ones; and providing all your stocks send out a swarm, you have twenty-four to come yet. Well, we will try to find a place for them, where they can be made useful. We will now return a swarm back to every one that has swarmed. And here the question is often asked—what do you do with the extra queen? Well, if I had any use for a queen, I should preserve her; or if I had a choice of the two, I should keep the best. But in this case I have no use for queens, so she may pass in with the swarm, and next morning you can have a funeral. But we are going astray again. We said we should send back a swarm to every old stock that had sent one out. But, if it can be avoided, do not return a swarm to the hive it came out from. We have returned hundreds of second swarms back to their own hive; but in this case, an old queen still under the swarming impulse, will sometimes lead the swarm out again. Now for further operations. You have to-day four swarms, of course in box hives, and let them stand just where you hived them till nearly dark; but during the afternoon you prepared four old stocks to receive them. I mean by this, that you have destroyed all queen cells to be found in said hives. If so, put on your surplus boxes or upper stories; bring on your platforms and douce the bees thereon. Shake all four swarms out on their platforms, and by the time you get back to the first one, the bees are making for the hive. With a little brush of some kind keep them moving till all are gone in. If, when you have returned a swarm to each old stock, the swarming still continues, make one or two more new swarms, till all are disposed of.

Now you have what we term a lot of strong swarms, not here and there one in the yard storing, as in most cases where swarming is allowed and every swarm hived separately; but every one storing surplus. How is that for high?

It may be, if the season is a good one, that some of your first hived double swarms may send out a swarm in about four weeks. If they do, our plan is to catch the queen, return the bees and let them raise a young queen. This has never failed with us. Give them plenty of room to store surplus honey, and you will not be troubled much with swarms.

A brother beekeeper suggested to us last season that Italians and hybrids will not bear handling and doubling like the black bees. We

shall give them a fair trial the coming season, and should such prove to be the case, we do not want them, as we are not prepared yet to believe that a single swarm of Italians will store as much honey as two swarms of blacks.

It may be that some beekeepers will object to this method of ours, in returning the swarms to all the hives that had sent out a swarm, destroying all the young queens, and returning all the old ones. Now, Mr. Editor, we honestly confess that we were a little skeptical on this point ourselves, for the first two or three seasons; but time has proven to us that it made not a particle of difference. Our stocks are to-day just as good as they ever were, and we think even better. Our loss in queens has not amounted to more than one in twenty-five the year round.

And now, Mr. Editor, light your pipe* take the American Bee Journal, and sit down in the shade, where you can watch these stocks, as the bees fly out in all directions from the hive. It will make you smile; and you may just bet your old boots † that if there is any honey to be found, you will get your share. We have never had a season so poor since we adopted the plan, but a little double swarm would fill the hive with combs and store honey enough to last till spring. But we have known plenty of singly hived swarms starve before the first of December.

The past season a brother beekeeper condemned our plan on the ground that such a quantity of bees put in one hive, will invariably build too much drone comb. But it must be remembered that the swarm was hived four days before it was doubled; and if the weather was good the greater part of the combs are then already built or well started. But we have not been able to discover any difference. Some stocks build more of such combs than others. But do not be alarmed; the working force of your hives will be ample so long as the flowers last, and they will go into winter quarters with all the bees you need. In fact, we have sometimes thought the hives contained too many bees to winter well.

Our esteemed brother Ezra Rood, of Wayne, Michigan, paid us a visit last season, in swarming time, expressly to investigate our plan. We demonstrated to him our best Grecian style, and he went home as he said to put it in practice. As we have not heard from him since, we do not know how he likes it. Brother Townley of Parma, has practiced this plan, more or less; but as he has been extensively engaged in raising queens, we think he has not fully carried it out.

We also visited brother Temple, of Ridgway, Michigan. He has a large apiary, and after talking with him, we explained to him our method. He promised to try it, and at the following State Fair, held in Jackson, he told us, if he had known this before, he could have sold

hundreds of dollars' worth more honey; and he is another convert.

But, Mr. Editor, we have spun a pretty long yarn and will try to close. We should feel more at home holding the plow-handle than writing articles for the Journal, because many of its readers have forgotten more than we have ever thought of.

About hives we have nothing to say. We use a well made box, with frames. Cost about seventy-five cents. Two coats of paint, and the nail holes puttied up. We are a jackknife carpenter, and do our own work. We think very loud sometimes that if men would study bees more and fixings less, they would get more honey.

We have forgotten to mention one thing that has been useful to us. In swarming time it often happens that two swarms go together, and they prove more or less troublesome till one of the queens is killed. We have often had them swarm out two or three times, before finally concluding to stay. But we manage them in this way now. As soon as such swarms are hived, set the hive in a shady place on the ground, of course with a board under the hive. Raise the hive all around on blocks one inch thick. Now take any kind of thin cloth, having no holes or rents in it. Spread it over the top of the hive and reaching down to the ground. Pull the bottom of the cloth out tent-like, and lay stones or bricks on the loose ends, or anything that will keep all tight. Be sure that no place is left where a bee can get out, and they will remain perfectly quiet. By next morning one of the queens will have been destroyed; then put the hive on its stand, and all will be right.

If we have an unruly swarm we tent them out till sundown; then unite it with some other; and the trouble is at an end.

Long live the American Bee Journal, and may it see many happy new years.

J. BUTLER.

Jackson, Mich., Dec. 28, 1871.

[For the American Bee Journal.]

To Prevent Combs from Breaking.

The following is the way I prevent the comb from breaking while using the honey extractor, in cold weather, in fall or winter. It works with perfect satisfaction to me.

I use a zinc can with a tight cover and a hole near the bottom to let the honey out of. It is through this hole that I admit the steam. First I shave the caps off of two combs, put them in the can, and put on the cover, then having a common tea kettle boiling on the stove, I raise up the can so that the steam will enter at the aforementioned hole, turn the comb gently for three or four minutes, and then you may turn as fast as required without the least danger of breaking the combs. This is much better, and far less trouble than letting the combs stand in a warm room two or three hours.

J. PICKERING.

Brampton, Ontario, Canada.

* Fumigator, if you please. We do not now smoke. [Ed.]

† Not worth a dime! [Ed.]

THE AMERICAN BEE JOURNAL.

Washington, February, 1872.

✍ Ill health during part of the past month, prevented us from giving the Journal the usual attention, though we flatter ourselves that we have managed, notwithstanding, to make up a very readable paper.

✍ On the 14th ult., a subscriber mailed to us at Byron, Mich., a letter enclosing two dollars, but omitted to give us his name. Whom shall we credit?

Another subscriber, writing from Ipswich, Mass., on the 8th ult., enclosed two dollars, but likewise failed to give his name. In his case, we ventured to guess. If wrong, will the writer please correct us?

✍ Mr. G. W. Childs has sent us a copy of the PUBLIC LEDGER ALMANAC for 1872, containing a large amount of statistical and other information, in a condensed and compact form. The almanac is not for sale anywhere, but ninety thousand copies of it were printed by Mr. Childs, to be presented to subscribers to (Philadelphia) Public Ledger.

✍ Mr. A. Gray, of the firm of Gray & Winder, Cincinnati, Ohio, intends going to Europe in the spring, to procure a supply of pure Italian queen bees for his own apiary. He will also take a limited amount of orders from others desiring such queens, to be sent to them by express from Cincinnati on his return. Terms \$15 per queen. Orders accompanied by the cash, either in registered letters or post office money orders, should be addressed to him prior to March 15th next. Mr. Gray is an experienced bee-breeder, and will no doubt, make careful selections.

✍ To Mr. Langstroth's exposure of H. A. King's operations, and his dispassionate and dignified notice of the Baron of Berlepsch's Declaration, we need not invite attention—the interest felt in the subject will command it, of course.

✍ We purpose next month to insert the Baron of Berlepsch's Declaration, into the making of which he was unwarily entrapped by the wily misrepresentations of H. A. King. We reserve, till then, any remarks we may have to make with reference to it.

✍ A slight error occurred in the January number, in our reference to Mr. Langstroth, which, though of not much importance, we desire to correct.

Instead of "Before the spring of 1851 we never heard of Mr. Langstroth," read "Before the autumn of 1851." We then first heard of him from the late Rev. Dr. Berg; but we never saw him or had any conversation or correspondence with him till after the 1st of August, 1853, as we stated last month.

✍ The preposterous absurdity of claims made now to having invented movable frame hives twenty-five or thirty years ago, must be evident to every candid man, who reflects for a moment on the prerequisites which the intelligent use of such frames involves; and who is aware of what was the highest advance which practical bee-culture had reached in this country, when Mr. Langstroth made his invention and published his book. We have no hesitation in saying (and doubt not that all thinking beekeepers, old enough to know the facts as they then existed, will agree with us), that when Mr. L. invented his frames, and before he published his book, there were not three men in the country (unless instructed by him) who could have used a movable comb hive intelligently and successfully, if one had been presented to them ready stocked. Beekeepers had to be educated to use the frames—that is, they had to learn how to manipulate with them, before they could manage them with any prospect of success. Many, very many intelligent beekeepers, long accustomed to manage bees in common hives, tried to use them, and failed, because they relied on mere practical skill, without having previously qualified themselves, in some degree, by studying the science and theory. Hundreds, subsequently very skilful and successful operators, well remember the day when first they ventured to undertake the job of opening a hive and removing a comb crowded with bees; and many laughable stories have we heard from the lips of such, when detailing their unlucky experience and frequent discomfitures.

And now, men, who still occupy only *back seats* and the *lower forms* in the schools of apiculture, come forward and claim that they, *even they*, invented those frames a full quarter of a century ago! Why, they might as well claim to have invented car-buffers and couplings, railway switches, and track-laying machines, a lustrum or two before George Stevenson dreamed of the first locomotive that ever run by steam! Such people should reflect for a moment how preposterous their pretensions are, ere they commit themselves so egregiously.

CORRESPONDENCE OF THE BEE JOURNAL.

LOS ANGELOS, CAL., Dec. 25, 1871.—Bees have been able to fly and work up to this time, with the exception of about five days, it being rainy. But they found little honey since the last of August, as the weather was very dry. Vegetation is, however, starting finely now, and bees will soon have plenty of honey. There are a number of beekeepers here that have one hundred or more colonies; but the AMERICAN BEE JOURNAL and improved bee hives are not known to them.—J. BECKLEY.

LUCAS, MO., Jan. 6, 1872.—Bees laid up a good supply, and to spare, of liquid sweets this season. I had only eleven stands or colonies; and they averaged two hundred and forty per cent. profit the past season, above expenses. "How is this for high?"

Many of my farmer neighbors complain because the money-lender asks twenty per cent. for the use of his money, and say they can't make that at farming. Bees are the fellows for me. They board themselves and work for nothing.—Dr. D. L. LEWIS.

SOUTH ROYALTON, VT., Jan. 6.—We did not have an average yield of box honey, in this section, the past season, and next to no swarming. A large portion of the box honey was of poor quality, dark, and bitter, the product of "aphides" or plant lice, and the so-called honey dew. In some towns, however, bees did well, storing a fine quality and a fair amount. Four-fifths of the beekeepers are using the Langstroth hive, *pure and simple*; and the remainder are fast coming into the ranks.—D. C. HUNT.

WINCHESTER, VA., Jan. 8.—Our bees started in the spring as finely as we ever saw them; and with the abundance of fruit bloom we had, I looked for many swarms. But out of eighty colonies of black bees and eight colonies of Italians, I had only two swarms of blacks and two of Italians. They worked finely on white clover, alsike clover, and blue thistle, until the 15th of July. After that time, I do not think they made any honey, as I put one stand on a pair of scales, the 20th of May, and they never increased an ounce in weight after the 15th of July. The largest amount of honey stored in one day was three and a quarter (3¼) pounds on the 5th of June. The largest amount of honey got from one stock of black bees was seventy-one (71) pounds; and the largest amount from an Italian stock was one hundred and six (106) pounds, in twelve pound boxes with glass sides. I use the Langstroth movable comb hive; and like it better than any I have ever tried. I have never had my colonies heavier in honey than they are this winter. Some of my friends recommend me to take some of the honey from them, but I think I shall let them alone.—B. F. MONTGOMERY.

VERMONTVILLE, MICH., Jan. 9.—My success has been indifferent, thus far; and my bees, I find, approximate closely to the cost of Horace Greeley's turnips. I have sixteen colonies in my apiary, all in Langstroth hives; one colony of pure Italians, the remainder blacks. I hope, however, to be able to give you a better report hereafter.—H. J. MARTIN.

BLAIRSTOWN, IOWA, Jan. 15.—I have kept bees for only two years. I commenced with three stands in box hives, on shares, and put eleven in movable frame hives, in my cellar this fall. I use the Langstroth hive, only *deeper* than the usual form. Mine are 14 inches wide, 15½ deep, and 11½ high. I like this form better for this windy prairie.—H. D. MOELLER.

[For the American Bee Journal.]

Tennessee Apiarian Society and Outside Talk.

MR. EDITOR:—In the December number of the Journal, Mr. W. R. King, of Milton, Ky., in speaking of the Apiarian Exhibition at the Tennessee Agricultural and Mechanical Association Fair, recently held at this place, in which he had entered his "Triumph" hive, says:

"As I was a stranger, and a long way from home, I kept quiet and looked on, listening to outsiders, and it was the general talk that the Tennessee Apiarian Society did not intend that the Langstroth hive should be beat, for their President owns the State of Tennessee for that hive; besides, they had adopted it, as a society,

and they mean to hold on to it, no matter what better hive may be shown them."

Now, as this does very great injustice to the Tennessee Apiarian Society, I desire, as a member of this Society and as one of the superintendents of the Apiarian Department, to totally deny that any such feeling existed in the Society. My relation to the Society is such that such a question could hardly be discussed where I would not hear it, as I probably see more of the members between times of meetings than any other member, and I can assure Mr. King that I have never heard one word spoken, as *outsiders* inform him. The only thing that gives the least plausibility to any partiality for the Langstroth hive, is the fact that, some three or four years ago, the Society adopted a resolution *recommending* the use of the Langstroth hive. At that time the right to this State was owned by Mr. Otis, and not by Dr. Hamlin, the President of the Society. He only purchased the right of the State about one year ago. There have been additions to the Society since then, and no one has any right to infer what hive would be endorsed by a vote of the Society now. And right here a few facts in regard to the status of some of the members of our Society will go far to refute the *outside* talk referred to by Mr. King. The Vice President of our Society prefers the Adair hive; another member of the Society uses the Adair hive, and owns the patent right for this county; another uses what he calls the "Tennessee Improved" hive, which was in competition with other hives at the Fair; and still another has an invention of his own (a side-opening and side-surplus box hive), which he uses exclusively, and will introduce it soon. Two others use both the "Buckeye" and the "Langstroth" hives; and two others use the "Alley" and "Langstroth" hives. To any one acquainted with the number of active members of our Society, this will be conclusive evidence that they are not so wedded to the Langstroth hive as to turn out in a body to prevent any other hive from taking a premium.

Now I have not the least doubt that Mr. King heard just such talk as he states, for I have heard the spirit of it myself, but I doubt if it was very *general*, or if a single person, not interested in other hives spoke of it.

There is a certain hive in use in this part of the country, called the "Buckeye." Two or three years ago, at the Fair held at the same place, the Langstroth hive, entered by Dr. Hamlin, took the premium over the Buckeye. The Buckeye parties chose to believe that this premium was awarded to the *man* and not to the *hive*, Dr. Hamlin being the most prominent apiarian in the State, and they have declined to enter their hive for premium since. I do not allude to this to open any discussion as to the fairness or unfairness of the award, as it was before my bee days; but only to account for this present *outside* talk Mr. King heard so much of. I have several good friends interested in the "Buckeye" hive, and after I was appointed one of the superintendents of the Apiarian Department, knowing their feelings about it, I tried to induce them to exhibit their hive, honey, &c., for

two purposes—to make a large exhibition in my department, and to prove to them that they should have fair play. I thought the result of my assurance was that they would exhibit; but on Fair day I found that they still declined to do so, and were still of opinion that no one but Dr. Hamlin could take a premium; and it is not at all improbable that Mr. King heard outside talk as he states, but is the Tennessee Apiarian Society, or Dr. Hamlin, responsible for such unfounded prejudice, or for the Doctor purchasing a hive on which he can take premiums? Why do not these persecuted friends join our Society and outvote and outtalk the Langstroth members, if they choose. They have been repeatedly invited and urged to do so, but they seem to seek martyrdom.

Now the awards of premiums at this Fair prove that everything is not cut and dried for the Doctor's benefit, as intimated, but that he stands on his own merits, like the rest of us, for of the three premiums taken by Dr. H., two were without competition, and of the three entries by the Doctor, when there was competition, he only took one premium, and that was on his Langstroth hive.

This was my first experience at any fair, either as a manager or exhibitor; but knowing the squabbles that so often arise over awards of premiums, I determined and prided myself on my efforts, to have everything done most fairly. It was the duty of the superintendents of each department of the Fair to appoint committees in their respective departments, and as my co-superintendent, Dr. H., was an exhibitor in every item in the bee line, and I only in one, namely, "extracted honey," he turned the entire matter of committees over to me, without any suggestion as to the make-up of them, more than to express the hope that it would be done in a manner to give every one a fair chance, as he wanted nothing more; and I, when it came to premiums on "honey," delegated Mr. King to make up the committee and superintend the awards, which he did on a day when I was not on the grounds at all.

In making up the committee on hives, the name of every one, with that of the hive he used, was laid before the exhibitors for their approval, and all agreed that the committee was satisfactory. Some of them were entirely unknown to me until that moment. Each exhibitor then explained the merits of his own hive, except Dr. Hamlin, who, being one of the superintendents, thought best to allow his employee, Mr. Ladd, to set forth the merits of his hive. I did not see Mr. Barnum on the ground.

Of the committee of five two were members of the Tennessee Apiarian Society; and one of these two, notwithstanding he uses the Langstroth hive, voted for King's "Triumph" hive. It is proper to state that Mr. King's hive is not in use here, and his exhibition at the Fair was our first sight of it.

As to the charge that the Tennessee Apiarian Society will hold on to the Langstroth hive, no matter what better hive may be shown them, I will merely say that we are too smart for that. The only earthly interest we have in any hive is

in the one from which we can get the *greatest yield of honey*; and if it is demonstrated that that can be accomplished by lodging our bees in a pumpkin, we will all use pumpkins.

I have necessarily made this communication rather long, but my apology is to place the Tennessee Apiarian Society in its proper light, to do justice to the officers of the Fair, and to assure Mr. King that it was not a cut and dried affair on the hive question, notwithstanding outside talk. And I herewith leave my statement to the judgment of beekeepers interested in the honor of their co-laborers, if Mr. King did not have fair play.

J. W. FISHER.

Nashville, Tenn., Dec. 13, 1871.

[For the American Bee Journal.]

Report from Hartford, Wisconsin.

CROWFOOT BRO.'S APIARY.

In May, 1869, we had two hundred and one colonies of bees, mostly Italians. It was such a bad season that we lost by actual starvation forty-nine colonies in the summer, and put up only one hundred and fifty-two in the fall. In the spring of 1870 we took out only thirty-two, and of these we lost eight before the 1st of June. We let them increase to eighty-two that summer, and got about seven hundred pounds of honey in boxes. By June, 1871, they had decreased to seventy colonies, and in the summer of that year we had thirty natural and fourteen artificial swarms, and obtained by weight fifteen thousand (15,000) pounds of extracted honey, and a little over one thousand (1,000) pounds of box honey. Some of our colonies have now over one hundred pounds of bees, bee bread, honey and combs per hive. We think there will be about four thousand pounds of honey in the hives in the spring, which we can take out, but this is only guess work. If it should prove to be correct it will make in all a little over twenty thousand (20,000) pounds of honey from seventy colonies, besides the increase in swarms. You are at liberty to publish this, but we have no time to answer letters of inquiry. We have stated facts, and that must do.

CROWFOOT BRO.'S.

Hartford, Wis., Nov. 30, 1871.

[For the American Bee Journal.]

Winter Reared Queens.

Away back somewhere in the Journal, some one asked what Dr. Gallup's opinion is about queens hatching in winter and becoming fertilized in spring. We have had such cases ourselves, and have already given our ideas of them in the American Bee Journal, but will now give them again, along with some other information. Our idea is that queens hatched in midwinter remain to a certain extent comparatively dormant; or, in other words, their age does not advance. The editor says on page 9 of No. 1, vol. 1, to this

effect: in autumn and winter bees may be said not to grow older, though advancing months in age. Last fall I received an Egyptian queen from Mr. A. Gray, and being anxious to see her progeny, I commenced stimulating and got three cards filled with brood. When that brood hatched out, or soon after, the Italian bees were all used up or dead with old age and labor. Whereas if they had been left to themselves they would have lived until their places had been supplied with young bees in the spring. In two cases I have changed black bees all to Italians in September and October, simply by stimulating to rear brood then, and it is a well known fact that if left to themselves at that season there would have been any quantity of blacks remaining the following May, and but very few Italians in the fall.

By the way, we were to test the working qualities of these Egyptians. So far I prefer the Italians, but their fighting qualities are excellent.

E. GALLUP.

Orchard, Iowa.

[For the American Bee Journal]

The Proposed Improved Hive.

MR. EDITOR:—On page 120 of the American Bee Journal for November last, Mr. Condit gives us an article on "Improved Bee Hives," in which he says that a hive which costs five dollars is too expensive for a majority of beekeepers; and one which costs but a single dollar, if so made that it is not easily manipulated, &c., is too cheap for any beekeeper.

Thus far I agree with Mr. C. He then says 2,000 cubic inches is believed by the most successful apiarians to be capacity sufficient for a large colony, for breeding purposes and storing winter supplies. He goes on to describe his cheap hive of thirteen frames, the dimensions of which are 19½ inches from front to rear, 15½ inches deep, and 12½ inches from side to side, which makes a hive of over 3700 cubic inches.

Why does he want to go so far astray from the most successful apiarians, making his cheap hive almost double the proper capacity?

Now I beg the privilege of differing with Mr. C. about this shaped hive being easily manipulated. Any beekeeper who has ever handled frames knows that it is difficult to lift out a frame from a full stock when the frames are fifteen inches or more deep. But when the frames are close fitting at the top, and 15½ inches by 19½, it is indeed a formidable undertaking to remove them.

I am not partial to a side-opening hive; but with such sized frames as Mr. C. describes, and close-fitting at that, I think we should want a "side-opener."

I have used the movable frames for fifteen years, and find the Langstroth hive, with frame ten inches deep, just the thing for this section. And if I were in Tennessee, or still further South, I would prefer them still more shallow. My experience is that the bees winter in them fully as well, if not better, than in deeper hives.

When we remember that Mr. C. writes from

Tennessee, where the bees can fly out, more or less, every week in the year, I cannot see why he objects to the Langstroth or other shallow hive, unless he has an axe to grind (even if it be only a twenty-five cent one).

I am confident that the Langstroth hive, with its large amount of surplus honey room, is just the thing for the South; and it does not cost "five dollars" either.

Let us take another peep into Mr. C.'s hive, and see if there are not other objections to it, with all its "cheapness." In the first place, it is too large (3700 cubic inches); but we will admit he can control the size with his division board. So, too, can we with the Langstroth hive, the Triumph hive, or almost any of the patent frame hives, or non-patented ones either. They all use the division board to contract the size of hive, to suit smaller swarms, or for queen raising.

Mr. C. says his bees work out at each end of his hive, or crosswise of the frames. Now, when we stand by the hive to open it or take out the frames, the most convenient place to stand is at the side of the frames. This, in this case, would be the front of his hive, which would be a great annoyance to the working bees when returning heavily laden from the fields.

He says, to secure the largest amount of honey we must use the Extractor. Well, his frames are close fitting, consequently are one and a half inches wide, and the combs are usually about seven-eighths of an inch thick. So that when he puts them in the Extractor, the wide frame will hold the comb off from the supporting wire; when the machine is put in motion the comb will break out, and he will have a "sweet" job to fasten them in again.

Then, he has a cross bar in the center of his frames, which is objectionable, as that is the place where we want brood and not wood; and to leave out his cross bar, his frame is too large and deep to handle or extract, and as the combs are usually not fastened at bottom, they would break down.

How does Mr. C. propose to ventilate his mammoth hive? When full of bees, in warm weather, there would be heat enough in it to almost roast a sirloin of beef. His frames are close fitting at top, so that no heated air can escape; and there is no cooling dead air space between the top of the frames and the top lid. I should hate to be one of his bees, to be roasted alive.

Mr. C. winds up by saying he will give a full and complete written description of his hive; but all correspondents must send stamp and money enough to pay for stationery, &c. We suppose he means about twenty-five cents for DE-CRIPTION. Cheap enough! Seventy-five per cent. below Gallup.

We have no "axe" to grind, but write simply to show that Mr. C. is mistaken in a good hive for Kentucky, Tennessee, and more Southern States.

With the best of feeling towards Mr. Condit and all other beekeepers, I am,

Very respectfully,

H. NESBIT.

Cynthiana, Ky., Dec. 10, 1871.

Alsike Clover.

Respecting this clover, so valuable in bee-culture, a correspondent in Cumberland, Md., writes to the *Maryland Farmer*, as follows:

"I will now say, that notwithstanding the drouth, and the exceedingly short crop of bees in this county, I cut fully three and a half tons of Alsike clover to the acre. Besides, it is decidedly the best pasture on my farm. Every farmer in the State should try it, as I am certain they will be rewarded."

Transactions of the North American Beekeepers' Society.

The Committee appointed by this Society at the late meeting at Cleveland, to publish its proceedings, will, as soon as it can be done have them printed and sent to all the members. Besides the discussions at Cleveland, it will embrace those of both the old associations, that met the year before, at Indianapolis and Cincinnati. As all the most important questions pertaining to bee-culture were discussed, by some of the most experienced beekeepers of the continent, it will be a book that no interested beekeeper can well afford to do without. It will only be sent to members of the Society. Those who desire it can get it by sending in their names and \$1, to either the Secretary or Treasurer, or to the undersigned, Chairman of the Committee, immediately, as on account of the size of the book, the funds on hand will not allow of the publication of extra copies for sale. As the larger the number printed the less will be the cost per copy, persons desiring copies for sale, who will send \$10 or more, will have sent to them books to that amount at cost of publication and packing. That cannot be ascertained now, but will be low enough to allow a good profit on the sale of it, and the more that are ordered the less will be the cost. There ought to be at least 10,000 of them distributed.

Every patentee of, or owner of territory under a patent hive, extractor or other article for beekeepers, every dealer in such things, and every queen-breeder could find sale for a large number or give them as premiums.

Orders with the money sent during February, will be filled.

D. L. ADAIR,

Chairman of Publishing Committee,

Jan., 1872.—1t.

Harrisville, Ky.

DOMESTICATED MINK,

I have a few pair of Domesticated Mink, which for want of room, I offer for sale, price \$35.00 per pair, boxed and delivered at Express Office, they are very tame and have superior fur.

No Mink sent C. O. D. Address,

J. M. BEEBE, Cassadaga,

Jan. 1872.—1t

Chautauqua Co., N. Y.

EARLY QUEENS.

A few pure and prolific Italian Queen Bees, bred last summer in the Switzerland of America, for sale in April next, or earlier, at fifteen dollars each. "First come, first served."

Northern correspondents please address, "via Washington, D. C.,"

W. C. CONDIT,

Howard Springs, East Tennessee.

Jan'y, 1872—3 mos.*

A LIVE HOME JOURNAL!

NOTABLE CHANGE.

Last October, *Hearth and Home* passed into the hands of Messrs. ORANGE JUDD & Co., of 245 Broadway, New York, the well known publishers of the *American Agriculturist*—a journal long without a rival in sterling value and circulation. The marked improvements then expected to appear in *Hearth and Home* have been fully realized, and it is now one of the choicest illustrated journals anywhere issued for the family circle—adapted to both the juvenile and adult people, and meeting the special wants of the housekeeper. Besides it supplies very useful chapters for the garden and farm, and an important news sheet, giving a valuable *resumé* of the news for a week, up to the moment of issue. From \$500 to \$800 worth of very fine engravings beautify each weekly number. We notice now a still further mark of enterprise on the part of the publishers; they have secured the exclusive editorial services of Edward Eggleston, so widely and favorably known by his writings in *Scribner's Monthly*, and many other Magazines and Journals, and especially as the chief superintending Editor of the *New York Independent* for some time past. With this notable addition to the previously large and strong editorial force, *Hearth and Home* cannot fail to merit and command a prominent place in every household, in city, village, and country. Specimen copies can doubtless be obtained of the publishers, as above. Terms only \$3 a year. Single numbers 8 cents. *Hearth and Home* and *American Agriculturist* together, \$4 a year. Better add one or both of them to your supply of reading; they are each worth infinitely more than the small cost.

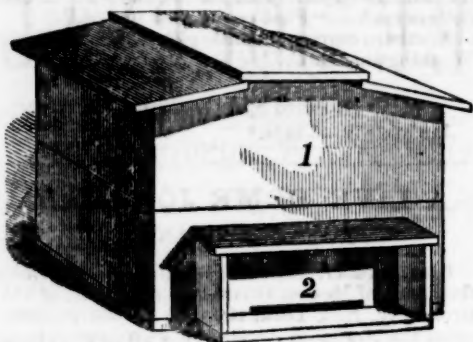
GARDEN AND FLOWER SEEDS, &c.

Fresh Garden, Flower, Tree and Shrub, Evergreen, Fruit and Herb Seeds, Prepaid by Mail. A complete and judicious assortment, 25 sorts of either class, \$1, the six classes, (150 packets) for \$5. Also, an immense stock of one year grafted Fruit Trees, Small Fruits, Fruit Stocks, Young Fruit, Ornamental and Evergreen Seedlings, Bulbs, Roses, Vines, House and Border Plants, &c., &c., the most complete assortment in America. Prepaid by Mail. Priced Catalogues to any address, also trade lists, gratis. Seeds on Commission. Agents Wanted.

B. M. WATSON, Old Colony Nurseries and Seed Warehouse, Plymouth, Mass. Established 18 2.

Feb., 1872.—ts.

H. ALLEY'S BAY STATE BEE HIVE.



Some of the best beekeepers of the country use them. All beekeepers should try them. Price reduced. Read what correspondents say of the Bay State Hive :

"I have one swarm in your Bay State Hive, that I have taken 110 lbs. of honey from up to July 1st. They are now filling six five pound boxes. It goes ahead of all other hives. I am so well pleased with it, that I shall adopt it."

GEO. L. GAST,
Le Clair, Scott Co., Iowa,

"I have several different kinds of hives in use, but yours gave me more honey than any other."

RUFUS STICKNEY,
East Templeton, Mass.

"Your Bay State Hive is trumps. It beats all the rest I have."

E. C. KEARNES,
Lewistown, Pa.

"I think Alley's hive the best ever invented for obtaining surplus honey. I constructed two hives last season as an experiment, similar to Mr. Alley's. One of them gave me 66 lbs. of surplus honey."

GEO. CORK,
Canada.

For a full description, prices, &c., send stamp, for my new circular.

H. ALLEY,
Jan. 1870—tf. Wenham, Essex Co., Mass.

HONEY WANTED.

HIVES AND BOXES FOR SALE.

We have made arrangements for the sale of a large amount of honey. Parties having honey in the comb, or extracted, will please correspond with us at once, stating how much they have to spare, quality, condition, price, &c.

Langstroth Hives, and Glass Honey Boxes for sale, in quantities to suit purchasers. When you write, state how many hives and boxes you want, and we will send you the prices. Address,
NATIONAL BEE HIVE COMPANY.

St. Charles, Kane Co., Ills.
Jan'y, 1872—tf

COMB GUIDE PRESS.

With this instrument a child can put Wax Comb Guides on twelve frames in five minutes. Price of the instrument, delivered at the Express office, \$1.25. Send stamp for a sample.

COMB-FASTENING PRESS.

This implement fastens quickly and substantially Dry Combs, or Comb Foundations, in the frames. Price, \$2.

Comb-Guide Press and Comb-Fastening Press, together, \$3. When ordering, send the inside length of the top bar of your frames.

Patent solicited.

CH. DADANT,
April, 1871.—tf. Hamilton, Ills.

APIARIAN SUPPLIES.

Send for our circular of Queens, Full Colonies of Bees, Hives, Bee Books, Bee Veils, Queen Cages, &c., &c.

We furnish Hives of all the leading improved varieties, with or without bees.

Pure and Prolific Queens at reasonable rates. Circulars free. Address,

OWEN & LADD,
Brentwood, Williamson Co.,
Feb., 1872—tf. Tenn.

W. H. FURMAN,

BREEDER OF ITALIAN BEES.

Having been such for eleven years past, I have over two hundred stocks of pure Italians.

Address me, at
Aug., 1871.—tf. Cedar Rapids, Iowa.

BEAUTIFUL ITALIAN QUEEN BEES.

AT THE GYMNASIUM CANTONAL OF TESSIN, IN
BELLINZONA, SWITZERLAND.

1. For an Italian Queen Bee, accompanied by a sufficient number of workers, and provision for a thirty days' journey packing included, and freight to Bremen, Hamburg, Havre, or Ostend, prepaid, if sent during April, 11 francs; during May, 10 francs; during June, 9 francs; during July, 8 francs; during August, 7 francs; during September, 6 francs, and during October, 5 francs.

2. Queens will be sent only in parcels of four, six, eight, twelve, or twenty-four.

3. All queens sent, to go at the risk of the party ordering them. Good and careful packing guaranteed.

4. The cash must accompany every order, or it will not be noticed. Address,

J. A. CHEVALLEY,
Professor at the Gymnasium Cantonal
in Bellinzona, Canton of Tessin, Switzerland.
Jan'y, 1872—tf